

# SUPPLEMENT

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### Section VIII.—Neurology and Psychiatry.

#### VERTIGO.

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(Continued from Page 432.)

Tracing the course of the vestibular nerve further, we find its fibres ending in the vestibular nuclei. There is definite evidence clinically that vertigo may originate here. There is a well-recognized syndrome of symptoms arising from a temporary or permanent occlusion of the posterior, inferior cerebellar artery, namely severe vertigo with analgesia and thermo-anæsthesia of the limbs of the opposite side and of the area of distribution of the fifth nerve of the same side *et cetera*. But it is, I think, reasonable to assume that a temporary occlusion of the branches of this artery to the vestibular nuclei may occur alone. Such a lesion would lead to anoxæmia of the large ganglion cells of the nuclei. Now, anoxæmia alone, as Haldane has shown, is a great stimulant to the nerve cells of the respiratory centre. If it stimulates these cells to greater activity, will it not act as a stimulus to other cells of the brain and cord? When a patient faints he complains of giddiness; we note the gradual disappearance of the pulse, the pallor of the face, the dilated pupils and lastly the slight but definite convulsive movements of the body. We attribute this state to cerebral anæmia, that is to anoxæmia. I would interpret the giddiness in part at any rate to stimulation of the vestibular nuclei; the dilatation of the pupils to irritation of the cells of the cilio-spinal centre; the convulsive movements to irritation of the cortical motor nerves, probably also of the ventral horn cells; and the only stimulus that could be present in such a state would be anoxæmia.

How else can we explain such a case as the following:

A man travelling on one of our ferry boats, feeling perfectly well, reading his morning paper, suddenly found his equilibrium disturbed. He felt that the bow of the boat was sinking and the stern rising. He adjusted himself to the apparent alterations in his surroundings by leaning over in the imaginary plane of the boat and realizing he was about to fall, endeavoured to overcome it. This he did by a tremendous and wide-spread muscular effort, which had the result of throwing him down off his seat. But in doing so he collided with his fellow-passengers who were thrown down too, like nine-pins, one knocking against the other. This particular patient suffered from recurrent attacks of a similar character. In

the intervals he is quite well. He has been carefully examined by Dr. Herbert Marks, who pronounced his labyrinth quite normal.

It is well-known that an epileptic seizure may be ushered in with a definite attack of vertigo. The vertigo may be the result of irritation of the receptors or the vestibular nuclei or of the cerebellum.

Mr. Percy Sargent in an interesting paper (4) showed that many symptoms of epilepsy could be explained by a great disturbance of the vascular supply to the brain. There is certainly a close resemblance between the symptoms of a fainting attack, as previously mentioned, and those of an attack of minor epilepsy, but I do not think we should press the analogy too far. I would, however, lay stress on the extraordinarily irritating effects of anoxæmia on nerve cells and the evidence I have adduced supports the view that vertigo may frequently be the result of anoxæmia of the vestibular nuclei.

Now in these cases of vascular obstruction and spasm affecting the vestibular receptors which we have already discussed, it may be that anoxæmia is the explanation for the increased irritability of those nerve endings.

Turning our attention now to the course of the nerve fibres emerging from the vestibular nuclei, we see from the diagrams that they have manifold connections. Some pass to the cortex of the *vermis* and lateral lobe of the cerebellum, some to the roof nuclei of the cerebellum, others pass to and help to form the commissural tract known as the median longitudinal bundle. It is by means of this bundle that the vestibular nuclei are brought into communication with the ocular nuclei, with the nuclei of the vagus and the spinal accessory and ventral horn cells throughout the spinal cord.

But Deiter's nuclei by means of the vestibulo-spinal tracts have a direct connexion with the ventral horn cells. They also have an indirect connexion with these cells. From the cerebellar cortex fibres pass to the dentate nucleus, from which a bundle of fibres arises and forms the superior peduncle which, coursing upwards, ends in the red nucleus, whence fibres pass to the *thalamus* and thence to the *cortex*. From this nucleus the rubro-spinal tract takes origin, descends through the *pons* and medulla to end around the cells of the ventral horn of the cord. These various connexions of the vestibular nuclei are all important, for through them we are able to realize many of the reflex disturbances that are associated with vertigo.

A violent irritation of the vestibular apparatus will be conveyed by means of the median longitudinal to the vagal nucleus and bring about nausea and vomiting. Those common accompaniments of vertigo may be severe and may persist for many days; too often unfortunately

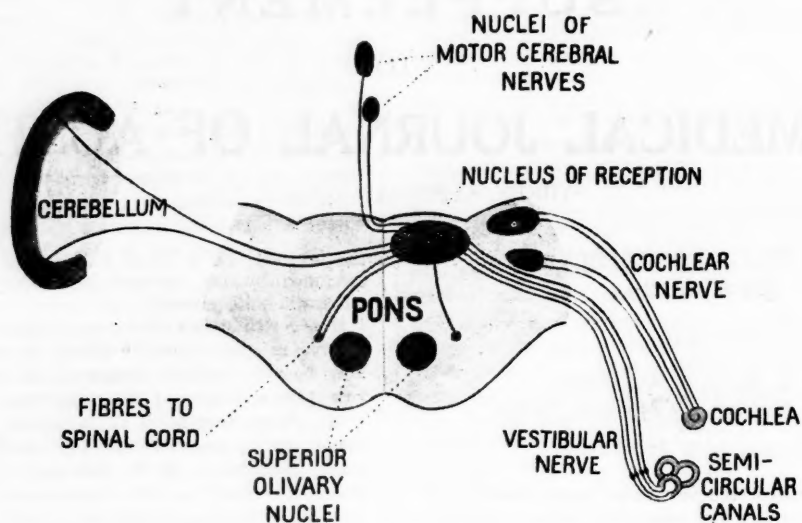


FIGURE I.

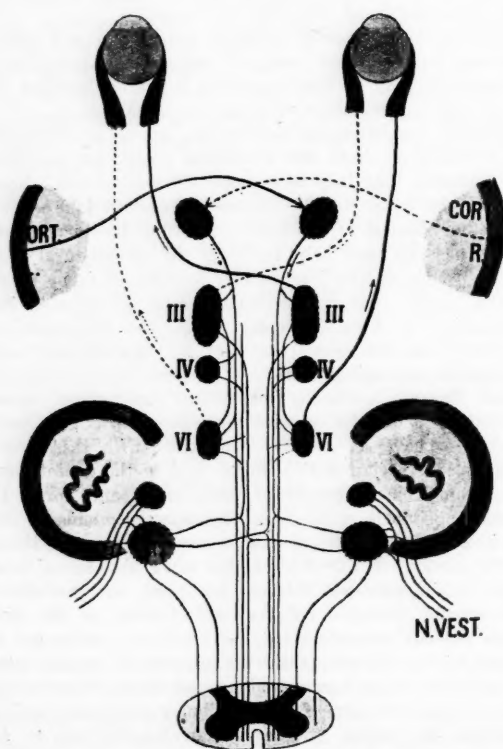


FIGURE II.

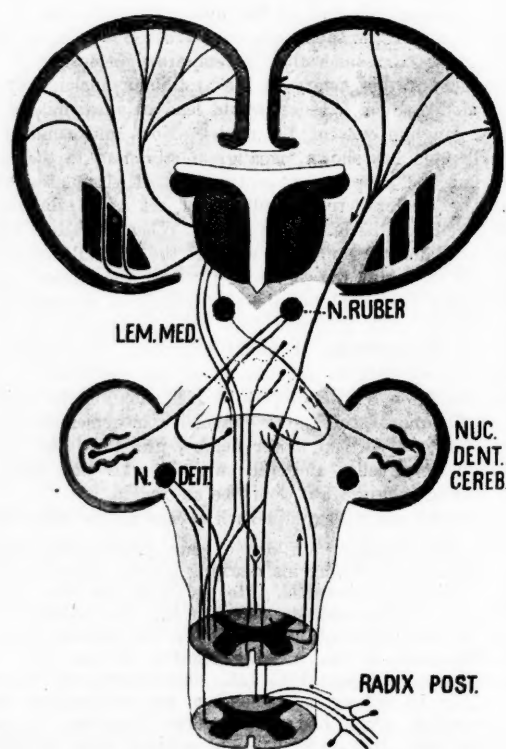


FIGURE III.

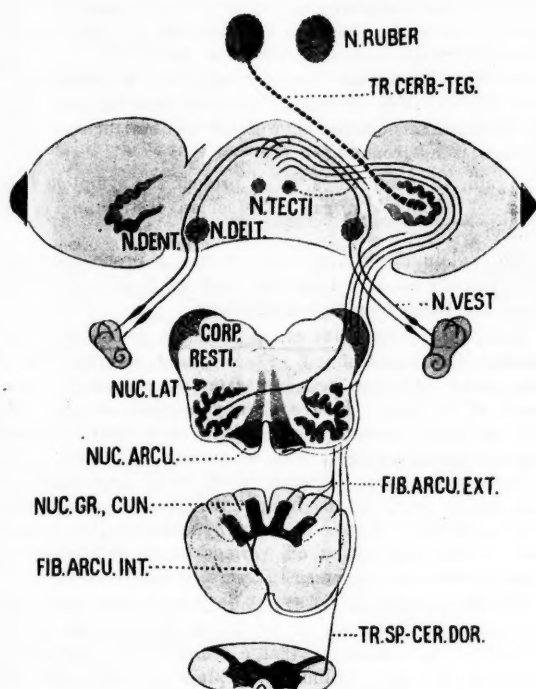


FIGURE IV.

for accuracy in diagnosis they are attributed to disorders of the stomach.

Again, by means of the median longitudinal bundle stimuli affecting the vestibular nerve are conducted to the ocular nuclei. A normal stimulus to the vestibular nerve endings, such as results from a movement of the head to the right or to the left causes an involuntary or reflex movement of the eyes to the right or to the left. Eye movements accompany head movements. The associated movements are wonderfully harmonious. When the stimulus to the vestibular mechanism is severe or unusual, the stimulus conveyed by the left bundle to the eye nuclei is severe and unusual. A severe and unusual stimulus affecting the vestibular nuclei is conveyed to the nucleus of the sixth nerve which acting with and controlling the third nerve nucleus of the same side leads to conjugate movement of the head and eyes to the side of stimulation, and if the stimulus continues or is intermittent to that characteristic movement of the eyes known as nystagmus.

Bárány's caloric tests and the rotation tests leading to vertigo, nystagmus and past pointing, rest upon these anatomical and physiological foundations. Discussion of these tests, however, does not come within the scope of this paper.

It is well known that tumours of the cerebellum are characterized by vertigo, but other signs and symptoms present in such cases will enable us in most cases to locate the lesion and the origin of the vertigo. Time will not permit me to discuss these cerebellar lesions nor the vertigo that arises from disturbances of afferent impulses from the eyes.

It is an undoubted fact that vertigo is not uncommon in cases of high blood pressure. From this fact the conclusion is drawn that the high blood pressure is the cause of the vertigo. I do not think that this conclusion is warranted. I feel sure I am right in saying that vertigo is not experienced by the majority of people who suffer from high blood pressure, and not even by those whose blood pressure reaches a very high degree, such as systolic 250 millimetres of mercury or more and diastolic 140 millimetres of mercury or more. We must bear in mind that the changes in the heart and blood vessels which lead to high blood pressure are of very gradual development, extending over many years (I leave out of consideration cases of high blood pressure met with in eclampsia or the albuminuria of pregnancy).

Now the body adapts itself very readily both to external and internal changes of environment. Surely we would expect that to such a change of internal environment as increasing high blood pressure the vestibular apparatus would gradually become accustomed.

But we know that in cases of high blood pressure some of the vessels of the body show such structural changes that their lumen becomes very greatly reduced or even obliterated. The tissues supplied by such vessels receive a deficient blood supply or none at all. It is a well known fact that cerebral softening from vascular occlusion occurs frequently in cases of high blood pressure. One explanation then of the association of high blood pressure and vertigo is that the lumen of the vessels supplying the vestibular apparatus may be so reduced that a sufficient supply is not forthcoming. This would lead to anoxæmia and anoxæmia, as I have shown, produces vertigo. But I would venture another explanation of vertigo associated with high blood pressure. In cases of high arterial tension the kidneys undergo structural degeneration, in some cases to such an extent that their function is greatly impaired. Such impairment of function may result in various manifestations of uræmia, of which vertigo is one. But in cases where there is imperfect renal function, vertigo may be a pronounced symptom, and this I suggest may be due to defective elimination of waste products which act on the delicate vestibular receptors or their vestibular nuclei.

Nor must we forget that tobacco is not infrequently a cause of vertigo. A scientific friend of mine was a fairly heavy pipe smoker for years, until he had to admit though he was loath to do so, that occasional attacks of nausea and vomiting and frequent attacks of vertigo were caused by tobacco smoking. His attacks of vertigo were at times so severe that he could not walk from his laboratory to his home without seeking support from the railings in front of the houses he had to pass on his way. Frequently he felt it was wise to stay in his laboratory until after dark so that he might stagger home unrecognized.

Infectious diseases play an important part in the causation of vertigo. I will relate one case.

A patient of mine gave the following history. Awakened one morning he immediately got out of bed to go to his work. As soon as his feet touched the floor he was seized with the most violent vertigo; he fell to the floor; there he had to remain for some time because any attempts to move caused the vertigo to become more and

more intense. It was only after a considerable time that he managed to get back to bed, where he remained for many days before the vertigo left him. Careful inquiry elicited the fact that he had suffered two or three weeks previously to the onset of vertigo from an illness said to be influenza. Symptoms which developed subsequently, and which were present when seen by me, namely slight facial palsy, defective hearing, tinnitus and vertigo, rather suggested that the influenzal symptoms were due to poli-encephalitis or meningo-encephalitis. One could reasonably attribute the various symptoms, vertigo, tinnitus, defective hearing, facial palsy, to a lesion of encephalitic nature affecting the cochlear, vestibular and facial nuclei or to a localized meningitis affecting the facial, auditory and vestibular nerves. A labyrinthitis would not account for the facial palsy. A tumour beneath the *tentorium* in the cerebello-pontine angle would produce such symptoms, but as the man recovered almost completely, such a diagnosis could not be maintained.

As I have already mentioned it is only by a knowledge of the connexions of the vestibular nerve with other parts of the central nervous system that we are able to appreciate the wide-spread disturbances that are associated with vertigo. The chief of these disturbances are vomiting, nystagmus, loss of muscular tone and loss of equilibrium.

I have very briefly referred to vomiting and nystagmus and have indicated their nervous connexions and mode of origin. I wish now only to refer to disturbance of equilibrium from vertigo which may result in the patient falling to the ground. Why does the patient fall as a result of vertigo?

One patient stated that the giddiness was at times so severe that it threw him down.

Another, that before he realized it, he found himself on the ground and saw everything whirling about him in all directions for a short time.

Is the falling due to a general and complete loss of muscular tone or is it due to a supreme effort to maintain equilibrium to a false environment? I think probably both conditions operate.

Sherrington (5) (page 343) speaks of the knock-out blow where the lower jaw conveys concussion to the otocyst which reduces in a moment a vigorous athlete to an unstrung bulk of flesh whose weight alone determines its attitude. This is an excellent example of a labyrinthine disturbance resulting in a complete loss of muscular tone.

On the other hand the patient already mentioned who knocked his fellow-passengers off their seat, is an example of a violent muscular effort to keep himself right side up to his supposed environment. In other words, he threw himself down.

But when an individual receives a knock-out blow, he becomes unconscious. The effect of the blow is something more than a violent stimulus to his labyrinth. The whole brain receives the effect and a concussion results. He has no time to feel the sensation of vertigo.

Vertigo, as met with clinically as far as I have been able to observe, does not produce unconsciousness and is not associated with unconsciousness unless it be, as it sometimes is part of the symptom complex of epilepsy.

In a certain number of cases of Eustachian obstruction vertigo is sometimes a pronounced symptom. Sydney

Scott, in an interesting paper on vertigo speaks of "the subtle relationship between the majority of cases of recurrent vertigo, commonly known as Menière's disease and unilateral Eustachian tube obstruction or inefficiency." (6) Now I think it will be conceded that in most cases of Eustachian obstruction, whether bilateral or unilateral, vertigo is not complained of.

Again, in many cases which present the symptom complex of Menière's disease, Eustachian obstruction is not found.

To explain the vertigo which is such a pronounced feature in such cases, it is evident that we must look further than the Eustachian tube inefficiency.

Now, the vertigo in so-called Menière's disease is characterized by its suddenness of onset and severity from a very gentle stimulus, such for example as a slight movement of the head. I have already pointed out that only the vestibular receptors respond to such gentle physiological stimuli as slight head movements. If these gentle stimuli evoke nerve impulses which being transmitted to the higher parts of the brain, give rise to vertigo, then they must be in a state of great hypersensitivity. I have also shown that toxins of various kinds and anoxæmia may produce the hypersensitiveness of the receptors.

Where Eustachian obstruction is associated with suddenly recurring attacks of vertigo, it seems to me we are forced to the conclusion that a temporary hypersensitive condition of the vestibular receptors is responsible for the vertigo and further, that such a temporary hypersensitive state of the vestibular receptors is dependent upon temporary vascular changes inducing anoxæmia. The following case, I think, lends support to such a view.

A man of thirty-eight years, temperate habits, while in the act of stooping to look at a new motor car, fell suddenly to the ground. The car then appeared to be upside down and the wheels to be revolving at a great speed. He was able to get up after some seconds, but felt nauseated and vomited. A short time afterwards he felt quite all right. He has had many attacks of vertigo since, but none quite so severe. Some of the attacks have been very slight and of momentary duration. He has had a dozen slight attacks in a day. He smokes, but is not a heavy smoker and he has not smoked since his first attack. Since the first attack he has had pulsating tinnitus. The tinnitus becomes more pronounced immediately preceding a vertiginous attack. It reaches a certain pitch of severity, then he suddenly becomes giddy and feels as if he would lose his balance. In some of the attacks external objects rotate from left to right. In between attacks he is quite well and has no sensation of vertigo. He plays a vigorous game of tennis, but has never suffered from vertigo while playing.

Dr. Marks examined this patient and found unilateral Eustachian obstruction. He treated the patient by inflation with relief to the obstruction, but still the patient continued to suffer from mild vertiginous attacks for many weeks, although he was able during this period to inflate his tubes with ease. The vertigo recently disappeared, but for some time previous to the cessation of the attacks he could prevent their onset by bustling about and making rapid movements with his arms. I think it will be accepted that these exercises and the exercise resulting from his game of tennis brought about a better blood supply to the vestibular apparatus.



Perhaps I may be allowed to summarize the conclusions at which I have arrived.

1. The chief and most frequent cause of vertigo is a disturbance of the vestibular nerve receptors.
2. When the vestibular nerve mechanism is healthy excessive stimuli or repeated stimuli are necessary to bring about the sensation known as vertigo.
3. When normal stimuli affect the vestibular nerve or its connexions in such a way as to cause vertigo, the nerve structures, especially the receptors, must be in a hypersensitive state.
4. This hypersensitive state will result from anoxæmia due to imperfect blood supply or toxic substances or products of infective diseases or septic processes.
5. Neither high blood pressure nor Eustachian tube inefficiency is an adequate explanation for the causation of vertigo.

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### THE PSYCHOLOGY OF THE CRIMINAL.

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Melbourne.

In reading to you this short paper on the psychology of the criminal I am conscious of the fact that I can present to you very little that can be asserted as positive knowledge; the mere title of the subject will indicate that to you all in a sufficiently obvious manner. I am only attempting to place before you tentative views that have gradually evolved in my own mind by a study of the subject and a very close acquaintanceship with many sufferers from psycho-neurotic disorders, some of whom have been delinquents and many of whom have been potential criminals, also by observation of and inquiry amongst some few who were already incarcerated in His Majesty's prisons.

The study of the criminal is, broadly speaking, an economic one. He is the result or the product of our present social and economic state which has taken many centuries to evolve.

I would not attempt to deny that delinquency did not occur amongst primitive man, but such could hardly be affirmed if by primitive man we meant man in a totally unorganized social state. The primal horde was probably the first attempt at social organization and as Freud has indicated in his masterful way, it was there that the first mental conflicts occurred, the beginning of that struggle between the primitive instincts issuing from and having their seat in the lower arcs of the central

nervous system and the as-yet-to-be-all-conquering sun of the intelligence ruling from the ever developing pallium, that struggle that is even now waxing strong, smashing many individual lives in its clash of forces and sometimes even threatening to overthrow not only the individual but also collective civilization itself. The great war has demonstrated to us all the awful brute forces that lie concealed in man's nature beneath the crust of reason and morality, the lust for death and destruction, brother against brother in awful and senseless fury. Is not this as much an act of delinquency as the theft of a meat pie? Is it not more so?

And so the criminal we have always had with us since the dawn of history and no good word was said of him except perhaps by the gifted seers until Lombroso began to study this unfortunate example of the human race from the individual point of view. His conclusions, as we now believe, were erroneous. He looked upon the delinquent as either an epileptic or an atavistic type and perhaps even yet these views may broadly speaking be correct, if we look upon the atavistic trend as being the rebellion against the leader of the primal horde represented by authority in its social aspect or if we look upon the epileptic character as one so unstable as to be unable adequately to react to the many conflicts produced by the environment of modern civilization.

But although Lombroso's studies stimulated an interest in the delinquent, they did not lead to any permanent or definite knowledge of the causes of crime.

It was reserved for modern psychology, as opposed to the older, more academic psychology, to lift the veil of obscurity surrounding delinquency and, if any single concept in modern psychology has done more than any other to help pierce this veil, it is the concept of the unconscious which we owe to the genius of the master Freud.

No doubt the many psychological tests which have been devised by different workers, have helped to extend the bounds of knowledge, but as most if not all of these tests are tests of intelligence (Berry's measurements being excepted), they are indicators of the conscious elements in the mentality of the person tested and give us no clue to the actions and reactions of that hinterland of mental life called for want perhaps of a better name the unconscious. It is to this aspect of the subject that I wish particularly to direct my remarks, for it is evident that if the unconscious can be explored, analysed, laid bare and sifted and if adequate causes of the individual's delinquency be found, then there is prospect of rectifying the conduct of the individual, of making him a useful citizen and of lessening the enormous expense that the burden of delinquency casts upon the social state, and diminishing the degradation caused by social ostracism, imprisonments or even trial. Delinquency thus becomes a medical problem of the greatest magnitude and one that our profession should not shrink from attacking.

It is impossible to state definitely what amount of money delinquency annually costs the State, but the Prison Inquiry Committee formed in England at the beginning of 1919 after three years' steady work estimated the actual cost of the whole prison system of England at £1,337,359 during the period 1921, being an annual

outlay of £121 per prisoner. It is safe to estimate that this amount could at least be doubled if we could include the colossal economic waste entailed in the upkeep of police, courts, magistrates *et cetera*, together with the actual monetary loss of national efficiency. So that from the economic aspect the problem is one of great interest.

The report states *inter alia*: "If this vast sum were doing something to lessen the volume of crime, it would be worth while. If, however, as the facts indicate, imprisonment helps to make criminals, this expenditure is not only colossal waste, it is positively injurious to the community."

Could we have a graver indictment of the present state of affairs or a more urgent appeal to us as men to endeavour to do something to understand the causes of delinquency and end or mitigate this unfortunate position.

I will now briefly indicate the factors so far ascertained in the causation of primary delinquency.

#### Mental Deficiency.

Of recent years all over the English-speaking world at any rate, there has been a great deal of attention paid to the problem of mental deficiency and in our own city Professor Berry has made studies on this question and stimulated interest in it and to him I would give an acknowledgement in this regard and thank him for being the first to rouse my interest in the subject.

The number of feeble-minded in any civilized community must be fairly large and any estimate made must rather be on the low side as the higher grades of mental deficiency are not always easy to estimate, but as practitioners of medicine we meet with a goodly number of people who could be classed as mentally deficient.

A committee of inquiry in this country during 1912 estimated that 2% of the children attending the State schools were definitely feeble-minded and that another 2% were backward. If these figures are correct, it would mean that in Victoria there were at least 5,000 feeble-minded children. This alone would give us about 0.5% of our population as feeble-minded.

The Royal Commission on the Feeble-minded in England, 1906, estimated that 0.5% of the population were feeble-minded.

Dr. Potts, of Birmingham, states that there are 0.28% of the population of that city known to be defective and that this number does not represent the whole.

The figures for England and Wales mean that there are now 178,000 mentally defective persons in those countries apart from certified lunatics.

I need not go into the estimate of the feeble-minded in other countries, the proportion would probably be the same. But what is the relationship of the feeble-minded to delinquency?

The medical investigators on the Royal Commission estimated that 10% of the prison population were mentally deficient. This number may be too large, for further study showed that during 1921-22 66,715 prisoners were received into His Majesty's gaols and of these on investigation 223 or 0.3% were certified as mentally deficient and again during 1922-23 of some 60,983 prisoners

received into gaol the number of defectives certified was 246 or 0.4%.

But if we take a special group we find that of 792 prisoners sent to Brixton for special psychological examination during 1921-1922 seventy-two or 9% were found mentally defective and in 1922-1923 out of 725 sent for special psychological examination sixty-seven or 9% were mentally defective. These very accurate figures rather tend to diminish the importance of mental deficiency as a factor in delinquency and indicate that the mentally defective is not met with in prison in the large numbers which some accepted before precise methods of examination were adopted.

Higher figures than these are given in other reports.

Dr. Healy, of Chicago, states that out of one thousand cases of young repeated offenders carefully studied by him 419 were found to be below the normal mental status of their age. Of the 419 there were sixty-nine definitely insane, eight were imbeciles and one hundred and seventy or 17% were definitely feeble-minded.

Dr. Potts, of Birmingham, estimates that 3% of delinquents are feeble-minded and Dr. Hamlin Smith's latest investigation of 325 inmates of Birmingham prison shows one hundred and five or about 23% to be mentally deficient, with another sixty-eight or 20% to be sub-normal. But he states that no conclusions must be drawn from these figures as to the number of mentally defective persons amongst criminals.

My own limited observations upon prisoners without any special tests would lead me to believe that the number of mentally defective criminals was not higher than about 10%, so that in Victoria we would have about eighty prisoners mentally defective.

It is estimated that about one-fifth of the delinquent class only are in prison at any one time. If that is so we should have in Victoria about four hundred mentally defective delinquents at least. This is a large number of persons to constitute a definite menace to the economic and social life of the State and any suggestions for the detection and segregation of these people should meet with approval as it would ultimately pay the State handsomely.

#### Mental Conflict.

Delinquency from this cause would thereby receive a check and the crime committed would steadily decrease; for this cause alone there is need for a mental deficiency act.

The next factor in the cause of delinquency is one that, I believe, is as important, if not more, important than mental deficiency, that is mental conflict. Whatever we do for the mentally defective, we cannot altogether in our present state eliminate them; they will crop up here and there in spite of acts of Parliament, but crime committed under the stress of mental conflict is worthy of even more investigation and consideration than that due to mental deficiencies; anyone and in fact all have mental conflicts.

I here find myself in absolute agreement with a statement of Professor Lowson in THE MEDICAL JOURNAL OF AUSTRALIA of January 1, 1923, to the effect that conflict of one kind or another is a central feature of our lives, apart from which our mental constitution cannot be understood. Thus everyone is potentially a delinquent.

This should bring the matter home to us individually and make us feel for the many unfortunates who, under the stress of mental conflict, have been forced into crime and from thence to gaol to become hardened and embittered individuals bearing an anti-social grudge throughout their lives. The descent is easy once started by a term of imprisonment.

Civilization is such that vast numbers of individuals are born and reared in unnatural and vicious surroundings. The instinctive components of the mind are all there and the forces of repression are weakened by disease, faulty education, the struggle for existence and so on and the individual is unable to sublimate his forces. He finds himself the victim of unbidden thoughts and imperious impulses, which often lead to acts of delinquency that from the point of view of reason are unreasonable.

Is it not a crime to judge and condemn such as these without an inquiry into the many factors determining the conduct? Conduct is the direct result of mental life and so we cannot understand conduct until the underlying psychical processes are laid bare and these processes cannot be brought to the light of understanding without the aid of psycho-analysis which enables us in some measure to retrace the steps of the individual's mental development along paths that lead from his infantile *milieu* and that have long ago become repressed into the unconscious and forgotten.

It is only by thorough psychological investigation that we can hope to understand the delinquent and change our own attitude towards him.

The effect of mental conflict in causing delinquency is becoming more and more widely recognized. Hamblin Smith states in his book "The Psychological of the Criminal": "Mental conflicts and the resulting repressions are among the main causative factors which produce delinquent conduct." And in his latest survey of 325 inmates of Birmingham prison he affirms that 151 are definitely normal, 68 are sub-normal and 106 are definitely mentally defective. Among the sixty-eight classed as sub-normal he finds some that have only a small intelligence defect, but this is complicated by mental conflict and in some the intelligence defect is the actual result of mental conflict. This latter factor is one that had never been clear to me, the fact of mental conflict causing an intelligence defect, but it has explained some of the cases that I have seen and did not quite understand and further it shows us how very careful we must be before we can classify the higher grades as being truly defective.

The normal and sub-normal groups were investigated for mental conflicts and the following percentages were obtained. Of the normal persons 64% were found to have become delinquent as the direct result of conflict and 54% of the sub-normal. Dr. Smith states that mental conflict is the most important single cause of delinquency amongst normal and sub-normal offenders and that further without exception the conflict was of a sex nature, although the offence committed may be entirely of a different nature.

Healy states that out of 823 individuals examined by him mental conflict was the causative factor in seventy-three, but he states further that statistics never will tell the whole story and in view of the facts pointed out by

Smith we might well expect that this number could be increased, if the three hundred and ninety in the same series, the causative factor of which Healy gives as "mental abnormalities and peculiarities," were further examined for conflict. Healy in other parts of his book emphasizes the importance of mental conflict and examination by psycho-analysis for the same.

It would thus seem that we must not let ourselves be deceived by the factor of defective mentality which appears to be only a minor one in causing delinquency. It is an easy explanation of the problem to a superficial observer, but the factor of mental conflict becomes more and more important, the more criminals are studied by psycho-analysis and those of us who are working by this method in the study of the psycho-neurosis, become daily more convinced of the enormous importance that mental conflicts play in the aetiology of these dreadful conditions and every day almost one finds factors in the life of these patients that may and do lead them towards delinquency.

In conclusion I will briefly state the history of a few cases that I have studied.

A male, youngest child learned to hate his father and authority. He became jealous of indulgences shown to elder brothers. This hatred led to a desire to kill the father. This was repressed. He ran away to sea for no apparent reason from a good home, but soon quarrelled with his captain and deserted. He did this repeatedly, always identifying the captain with the father. Later on he married. He thought his wife was dominating him. She had a miscarriage; he rationalized this into a deliberate abortion on her part and the thought came to kill her. This was at once repressed with great mental pain, but he deserted her and was arrested for wife desertion.

This man was young and had good intelligence but could never do any good. He also had strong anal (? eroticism).

A male as a child was intensely jealous of elder brother and his influence with the mother. The brother hatred was repressed. Later on at war he attempted to murder an officer who only gave him the slightest cause for anger. This officer was very like the hated brother. He was "court martialled"; he served a year and was then released and rejoined his unit but deserted. The impulse to kill was on point of breaking through again. Later on he had an intense compulsion to murder someone or to commit suicide to save himself. I have no doubt that this man will some day commit an act of violence.

Another male somewhat similar to this sought safety from his compulsion in chronic alcoholism.

Hamblin Smith and Healy both give examples of mental conflict leading to crime. The details can be found in their books on the subject.

I have conversed with many prisoners in gaol and these men almost invariably are as much at sea as to why they have committed crimes as those who have committed them to prison are. Some of them give an excuse such as alcoholism, but this in itself is only a rationalization and does not explain the impulse.

Other factors there are without doubt that enter into the causation of delinquency, physical factors. These must be taken into account in summing up the whole motive, but there is always the mental urge and it is to this that I wish particularly to direct the attention of



this Section, for all our efforts to stamp out crime will result and have resulted in failure until we examine each delinquent psychologically and trace the mental urges that have led to his conduct or determined the degree of mental defect that has permitted the primitive instincts to operate without the inhibition of the higher controlling forces.

It is a study of intense interest and one that will ultimately handsomely repay the State.

DR. RALPH NOBLE said that the work at Sing Sing prison, New York State, coincided with Healy's work. It was found that mental deficiency played a small part in crime. The criminal was the product of environment, the feeble-minded or heredity. Conflict was important, but these people did not possess the power of adaptation to surroundings. Many had been born psychologically but not mentally deficient.

DR. W. A. T. LIND said that he did not agree with the conflict theory, but more with Lombroso and others. Dr. Dane had not explained the passion of a normal man. In Scott's expedition to the South Pole some men picked for their health were impelled by the intense cold to commit murder, losing self-control. Society had all the criminals it required in grog shops, houses of ill-fame and other places. There was some degeneration in criminals, not all were so by birth. The law did not often differentiate between criminals and lunatics and medical men with experience only should judge.

SIR JOHN MACPHERSON expressed his surprise at the small percentage of defectives among criminals. Conflict was important as the basis of all crime, but it was at the bottom of all action, normal and abnormal. Dr. Dane had shown confusion in the classification of his cases. He had given three examples of conflict leading to crime. Sir John thought that they were obsessional cases arising from a previous conflict arising in earlier youth. They resembled *dementia praecox*. If those persons were neurotics, Dr. Dane could rightly argue that all criminality was of the same type. Some criminals were very intelligent; some did things that others better brought up would not do. Sir John would like to distinguish between the neurotic psycho-pathological mentality of the three cases cited and that of criminals.

DR. W. ERNEST JONES said that there had been a decrease in the number of criminals in Australia. Many were mentally defective. Dr. Dane's paper gave point to the recommendation that the visiting medical officer should be trained in psychiatry. He would like to hear Dr. Dane's opinion on the sexual crimes so prevalent at present. He considered that these persons should be punished as the only means of teaching self-control. Many certainly should be committed to an institution but the more intelligent type was the difficulty and should be punished.

DR. A. W. CAMPBELL said that the subject was important. He was interested in the discovery of so little defect in criminals. Segregation was suggested for the mentally deficient. These conflict cases were the most dangerous to the community which should be protected.

DR. J. K. ADEY remarked that in addition to the consideration of the number of neurones present in the supra-granular layer, consideration must also be given to the blood supply of the brain. As the body was the method by which the brain expressed its higher functions, a healthy body was essential to the well-being of the brain and must be taken into consideration.

He disagreed with results drawn from the examination of criminals in gaols. These criminals were represen-

tative of only one type of criminal, namely those who had been caught and who had probably been caught on account of their mental defect.

He also wished to ask members for their opinion on the subject of moral imbecility, those persons in whom no congenital or intellectual defect could be discovered and whose conduct showed great tendency to anti-social actions.

DR. DANE in reply said that the object of his paper was to open up the subject. No one theory would explain the delinquent. Anything, even physical states as defective eyesight, that might lead to conflict, could make the criminal.

#### RELATIONSHIP BETWEEN PSYCHOLOGICAL PROCESSES AND PHYSIOLOGICAL REFLEX MECHANISMS.

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In this paper my object is to discuss some points in the relationship between psychological and physiological mechanisms in normal and in abnormal states of the mind and of the nervous system.

Psychological terminology is often used when discussing physical conditions. For example, "sensation" is a psychological term and "sensory loss" is often spoken of when we mean that certain afferent neurones are damaged, which neurones in the normal would carry impulse giving rise to sensory impression. By using this mixed terminology, we tacitly admit the psychological hypothesis of psycho-physical parallelism (1) which recognizes that for every physical action there is psychical variation and *vice versa*, the psychologist makes no attempt to explain how this occurs. The physician has to take up exactly the same attitude, but by a knowledge of the structure of the paths along which physical action takes place, these various psychological parallelisms can be traced throughout the physiological reflex arc levels. Thus can we correlate to some extent various actions or behaviour with corresponding mental processes. Behaviour, however, will not tell us much about the mental processes, unless we resort to introspective subjection of our own thoughts and feelings.

It is by closer study of automatic movements of a primarily involuntary nature and of involuntary movements caused by the vegetative nervous system, as well as the interaction and integration between the highest intellectual levels and the reflex levels that we may more nearly attain a knowledge of the mechanisms that are at work in producing the "borderland" mental disorders.

First let us consider the various levels of physiological reflex activity in the nervous system, leaving out the highest controlling factor—the mind.

The supra-granular layer of the cerebral cortex is in continuous neuronic activity. The activity in this layer we can only hypothesize without the presence of mind. Under direct control of this layer is the highest affector-effector mechanism. Next comes the middle: then the lowest affector-effector mechanisms.



The organism is so adjusted that it will react in part or as a whole to specific forms of external stimuli. For example, Sherrington's decerebrate rigidity and postural tonus can be overcome by noxious stimuli, the former having its centre in the middle reflex arc level, the latter in the lower affector-effector level. Thus the animal without mind can adjust itself to its immediate surroundings and can as well remove a part from injury and will do so in spite of the higher and more complicated middle level. These muscular pattern movements cannot be said to occur because the animal "feels," until the psychological factor comes in. That these arch-types or innate reactions have an influence on the workings of the mind, is undoubted.

When mind comes into the question we see that the whole of our former conceptions of the physiological levels are altered; we have what may be termed the attentive-intellectual level, giving a new colour to each of the levels and in its turn being coloured by the physical reaction.

We can now talk of (i.) the level of highest integration, wherein memory, feeling, will, reason and attention, all the highest forms of consciousness, give rise to corresponding movements in the neurones of the supragranular layer of the cortex; (ii.) the highest sensory-motor level wherein perception and voluntary movement takes place; (iii.) the middle sensory-motor level, corresponding anatomically to the cerebellum and basal ganglia, which is the emotional, instinctive or automatic level; (iv.) the lowest sensory-motor level, on the somatic side the nociceptor proprioceptor purposive reflexes and on the vegetative side, involuntary muscle and secretory reflexes.

The vegetative nervous system, although not directly under control of will, yet can be stimulated, though in a way not quite understood by psychological mechanism. Rows (2) considers that abnormalities or infective conditions in the sympathetic system react upon the higher psychological centres and may give rise to many of the neuroses. The relationship between the sympathetic system and the endocrines is well known. Mott (3) has lately shown the close relationship between loss of function in the interstitial cells of the gonads and *dementia praecox*.

We all know that some men have what we might term an emotional-instinctive existence, either through environment (lack of development or education of their attentive-intellectual centres), or because this part of their nervous system may be less resistant to neural impulses than normal. The state of resistance or otherwise to stimuli in these various reflex arcs is an inborn or hereditary factor. Consideration of such will in some measure give us an ætiological factor in disorders of the mind.

The various difficulties that are met with in life, will be overcome or not according as to the reactivity or not in these various arcs. Mott (4) has said that in a neurosis the greater the purely external factor, that is the damage caused to the purely psychic level over the inborn tendency, the easier is the cure. This is seen in Case 1 below.

Golla has studied the psychic galvanic reactions in the normal and in the hysteric. The reaction depends upon

the diminution of electrical skin resistance that occurs when an emotion is felt as such. Thus diminution of resistance is caused by a sympathetic stimulation of the skin sweat glands. By means of experiments on himself he found that only stimuli in the shape of thoughts that really caused emotion, would produce this psycho-galvanic reaction. Emotion thus cannot be simulated. The hysteric, although he showed all manifestation of intense emotion, showed no psycho-galvanic reaction.

In the experiment the subject was told to press a button on a given signal—a pistol shot. The time was taken between the pistol shot, the voluntary action (0.2 second) and the psycho-galvanic reflex (2 seconds in the normal individual). The latter reaction is absent, or much diminished in hysteria. Thus the true hysteric has no real emotional feeling or at least it is greatly depressed.

Golla remarks that: "mind without emotion, is mind very much at the mercy of suggestion." Thus Babinski's definition of hysteria seems to be near the mark. The Freudians say that mental conflict is the sole cause of hysteria. Conflict, no doubt, will give rise to hysteria in a person whose emotional reactivity is lowered through inborn defect. The mind, being suggestible, will by self-suggestion take the easiest way from the ensuing difficulty.

Let us consider the mechanism that takes place in emotional-instinctive reactions.

McDougal (7) defines instinct as "an inherited or innate psycho-physical disposition which determines its possessor to perceive and to pay attention to objects of a certain class, to experience an emotional excitement of a particular quality upon perceiving such an object and to act in a particular manner or at least experience an impulse to such action."

Purely automatic movements in the middle affector-effector level have been studied by Sherrington (2) in decerebrate animals and by Buzzard and Riddock (8) in quadriplegias in man. The impulses which give rise to these movements travel to the anterior horn cell via the pre-pyramidal tracts. The afferent centre for this reflex is in the *paleo-thalamus*. Head and Holmes (9) have shown that when mind is brought into play, the *paleo-thalamus* is the affective or emotional centre.

The effective centre for automatic movements is in the large cells of the *globus pallidus* in the *corpus striatum*. Muskens (10) has experimentally shown in cats that there is a close connexion between the *globus pallidus*, posterior longitudinal bundle and the ocular nuclei and that it is from the *globus pallidus* that automatic movements of the eye are controlled. Interconnecting neurones link up the *paleo-thalamus* to the *corpus striatum*, so that the pathway of this afferent-automatic reflex can be followed.

When the volitional centres are present, these movements are modified by reinforcement or inhibition. That is to say they now have a teleological significance. The true emotional-instinctive reflex is not quite so simple as the automatic reflex. Lange James (11) states that an emotion is not actually felt as such until at least some of the motor reaction has taken place. Golla found that the psycho-galvanic reflex was not registered until nearly two seconds after the stimulus had been perceived and acted upon.

The initial stimulus, whether it be a sound or a sight

or a thought, gives rise through the effective mechanism to a general automatic discharge throughout the body, shown usually by expressions of the face. This general discharge can be modified by volitional action, for example the pressing of the button in Golla's experiment is reinforced by the automatic tracts going to those particular anterior horn cells. This general automatic discharge gives rise to an after discharge from the proprioceptors in the muscles concerned. These are received as numerous afferent impressions in the *paleo-thalamus* giving an effective state which is recognized by the higher centres as an emotional state. These afferent stimuli appear to overflow into the sympathetic nervous system, as shown by the psycho-galvanic reflex.

It might not be out of place here to say that the Lange James theory of emotion has been refuted by some because in the *syndrome thalamique* uncontrolled laughter and crying are seen with obviously no emotional content. May this not be because the caudate nucleus or *putamen*, which control the *globus pallidus* is organically diseased. The same uncontrolled laughter is seen in Wilson's disease.

Let us consider a concrete case where purely automatic movements are inhibited by organic disease.

A male, *aetatis* thirty, contracted lethargic encephalitis five years ago and now manifests the Parkinsonian syndrome, loss of automatic swinging of the arms in walking, diminution of facial expression and of eye movements in all directions. This patient can carry out all these movements by fixing his attention closely upon what he is doing. Thus, although at first appearance all his movements can only be performed slowly and with difficulty, if he is told to try to perform a certain movement quickly, he can do so, but there is no reinforcement from his automatic centres. I am told that in the middle of shaving he will often stop with his razor in one position on his face and will not go on until his attention is drawn to this fact. Whereas the patient before his illness was an ambitious and hard-working man, he is now lethargic and apparently lazy and without ambition. It is easy to see how, without there being any organic disease of his higher levels, this constant attention to all voluntary movements, will tend to exhaust this level. That his emotions are also depressed seems clinically obvious. This would coincide with what I have said concerning Lange James' theory of emotion. On the other hand there is no reason to suppose that the sympathetic reflex are mechanism that we have seen occur in emotional states, is damaged. It is significant that these patients show an increased activity on the sympathetic side—increased salivation and sweating. Is it possible that effective stimuli which would in normal people give rise to emotion, in these persons overflow over to the sympathetic side without giving the feeling of emotion?

Male, *aetatis* forty-five, gave a history of tuberculosis of the spine following an accident. His spine was immobilized and he was told that on no account was he to move his lower limbs. He found that if he moved his legs, he felt acute pain. He went to the Austin Hospital and I saw him at the beginning of the year. For the past fifteen years he has been unable to move out of bed without being lifted. I found that he had a kyphosis and there seemed to be no active tuberculous lesion. His reflexes were quite normal. If he moved his legs accidentally, he manifested symptoms of hysterical tremor and expressions

of great pain. With suggestive treatment, encouragement and pointing out his physical condition and massage this all disappeared and now he can move his limbs quite freely and can walk about with a stick.

This man seems to have had no inborn abnormalities and in the early stages of his illness merely recognized the importance of keeping still. He does not seem to have been particularly suggestible. The expressions of pain that came from him on movement were equivalent to a condition reflex, as he admitted afterwards that he really felt no pain, but felt that there ought to be pain on moving his legs. When he gained insight into his physical condition all these manifestations disappeared.

X Y., *aetatis* twenty-one, was seen first in Dr. Hiller's out-patients' clinic at the Melbourne Hospital. This patient gave a history of having had an anterior polio-myelitis some years ago and he was told that he would always be lame. He appeared in the out-patients' clinic leaning heavily on crutches and holding himself stiffly. He also spoke in a highly pitched juvenile voice. His mental attitude to life seemed somewhat theatrical and childish. It was thought that he showed very little, if any, signs of organic disease of the nervous system, although there was some muscular wasting due to disuse.

With suggestive treatment and massage, this youth within a few weeks was able to walk without any artificial aid. On the suggestion that as he could now walk like a man, he could talk like one, he promptly did so.

This case seems to be more likely one of true hysteria and it would be interesting to study his psycho-galvanic reaction. The fact that although he had no feeling of pain or discomfort in movement, he did not make any attempt to walk without the aid of crutches, seems to show an undue suggestibility on his part. His cure was easily effected, because there was no conflict going on in his intellectual-attentive level. He may have some inborn structural defect in one of his reflex arc systems. He may later develop other manifestations of hysteria in the face of any mental conflict.

G., *aetatis* thirty, a female. Seven years ago her father left home, leaving the patient and her mother with very little means of support and there has in consequence been a good deal of trouble and anxiety. The patient was very fond of her father, though she has an abhorrence of his desertion. She received letters from him periodically and she did not know whether to be glad that he was well, or sorry that he was alive. Thus there was a continual mental conflict going on. The onset of her present symptoms dated from when her father left home. She presented the following train of symptoms; Vague pains in the back and abdomen, headaches, worse during the menstrual period, general feeling of lassitude, erythematous flushing in neck and face and sweating of palms of hands, occasional puffiness of wrists and ankles, tachycardia and fine tremor of the fingers, all symptoms of constant sympathetic stimulation. There was no thyroid enlargement, no exophthalmos and her basal metabolic rate was normal. She showed no obvious signs of emotion, but discussed her symptoms and her troubles quite calmly. She seemed to be better when she was doing some work than when she was resting. There was no loss of weight. Physical examination threw no light on her physical condition. There seemed to be no hidden sexual complex.

I have seen her mother and she presents though in a milder degree somewhat the same train of symptoms.

This seems to be a case of anxiety neurosis. We have to consider whether it is caused entirely by some hidden complex or whether there is some physical defect. The

mental conflict and some physical defect may combine to cause her condition. The intellectual-attentive level is in good order. Is it possible that she has as an inborn defect an emotional-instinctive or without psychological terminology middle affective-effective level of abnormally low threshold, the effective side being the sympathetic, instead of the automatic side? The constant mental conflict would give rise to a constant flow of impulses through this level which has a low threshold; thus she is never allowed to forget unless she is dissipating nervous energy along other channels.

I have made an attempt to place the borderland cases upon a physical basis. The mind reacts upon the body, as the body does on the mind. Psycho-therapy plays its part in the treatment of these cases, but it seems not unreasonable for there to be a physiogenetic as well as a psychogenetic cause for all these conditions. Organotherapy has been disappointing in its results. Psychiatric clinics are undoubtedly a step in the right direction; the number of cures may be relatively small, but if we can help these sufferers to some extent and can gain a better insight into the relationship between their psychological and physical states, we may help to lay the foundation of a more healthy state of mental hygiene.

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DR. S. V. SEWELL said that these second level complexes were the bone of contention since the war with its psycho-neuroses, that fear was at the bottom of them and psycho-perspective rather than shunning the cause of the fear was called for.

DR. RALPH NOBLE said that neuroses were largely physical phenomena though not solely. He disagreed with the idea that if the stimulus be great enough, it would over-flow along the lines of the sympathetic. In a case of hysterical amnesia psycho-galvanic reactions were obtained without emotion. The sympathetic maintained muscular tone. The basis of hysteria was the close relation between the psychological and the physical. There was a conflict in every case. The higher centre was upset and the lower centre acted abnormally.

PROFESSOR J. P. LOWSON said that hysterical patients with pronounced symptoms were capable of increased emotion. Hysterical manifestations such as mutism, paralysis, were easily removed within forty-eight hours. Some of his patients walked in calmly and without emotion, but on speech restoration the emotion became marked. As to the psycho-galvanic reflex, straight forward emotion produced no swing of the instrument. Any stimulus to

which the person could not at once adjust himself, produced an immediate response. If a stimulus was connected with an emotional conflict, there was a reaction. In melancholia there was no response owing to lack of appreciation.

DR. A. W. CAMPBELL said that it was one of the most interesting and stimulating papers given.

DR. MAUDSLEY in reply said that emotional conflict was behind all these conditions. Every one had these conflicts which need not result in neuroses or psychoses. There must be some physical defect in the neuronic arcs.

#### THE PSYCHIATRIC CLINIC, ITS POLICY AND POSSIBILITIES.

By MORRIS GAMBLE, L.R.C.P., L.R.C.S. (Edinburgh),  
Melbourne.

ALMOST synchronously in the middle months of 1923 psychiatric clinics in connexion with general hospitals were established for the first time in the States of New South Wales and Victoria, namely at the Royal Prince Alfred Hospital in the former and at the Melbourne and Alfred Hospitals in the latter State. By this wise and beneficent innovation far-reaching advantages will accrue and the practice of psychiatry which heretofore has been the Cinderella of medicine, is provided with a golden opportunity of taking its rightful place with other branches of the healing art. More than anything else will these clinics help to remove the undoubted stigma that still attaches to the insane state in the eyes of the public.

To suffer from mental or nervous ill-health is, of course, not any more to be condemned than to suffer from any other physical disability, particularly as many authorities maintain that the majority of nervous and mental diseases have a physical and not a psychic causation.

To these clinics patients suffering from such troubles will come or be brought with far greater willingness (and in the early phases) to the receiving houses or mental hospitals of which the public at large has still a dread.

As neurology should form an essential part of the psychiatric clinic's function and as the term psychiatry is too restricted in meaning to embrace neurology, might it not be better to designate this branch of medicine diseases of the nervous system and to substitute the term neuropathic clinic for psychiatric clinic? The adoption of such nomenclature appears to have much to recommend it: the mind or psyche is not a spiritual or etherialized entity; it is purely a function of cerebral tissue and it must be studied from the biological point of view.

One of the chief advantages attaching to the psychiatric clinic is that it will be able to get at the earliest phases of disease and disorder of the central nervous system, for it is universally agreed that the better therapeutic results are obtainable, the earlier these patients are brought under treatment. It will be surprising to find what excellent remedial effects are produced in these patients when treated entirely as out-patients and this department of the clinic should receive special attention in view of its great value. It will be found, perhaps, in the first year of the establishment of the clinics that varieties of the functional nervous disorders (neuroses and psycho-neu-



roses) will constitute the largest group of cases dealt with, but that later other forms of nervous disease (now termed psychoses) will appear in their incipient and other stages.

These clinics are essentially intended for the observation and treatment of affections in the early stages of their manifestations, both in the out-patient department and in the wards to be set aside or provided for the patients. They will also serve the exceedingly useful purpose of clearing houses as it were for patients with all types of mental and "allied affections," for example border-line conditions, brought to the hospital; differentiating between those who are deemed recoverable within a reasonable time, say six weeks, and those who, being regarded as less likely to respond to treatment within that period, should be certified and sent to a receiving house or mental hospital without delay.

It may be confidently anticipated that within a few years the psychiatric clinic of the general hospital will receive from its particular section of the public the great majority, if not all, of the mental patients in the first instance, for observation, treatment or certification. The desire of the relatives and of the patient is always to avoid certification, if possible. By this means very many who at present are sent direct to the receiving house or mental hospital, will be treated in the general hospitals for a variable period and probably many will be restored to health and thus the several governments will be saved thousands of pounds annually in the maintenance of their mental hospitals. The annual expenditure on lunacy in Great Britain amounts to £3,000,000, that of Victoria is over £300,000, while that of New South Wales is appreciably greater than in Victoria.

The benefits that will be conferred by the clinics on the patients themselves and their relatives are obvious, not the least being that certification will be suspended, while even definitely mentally disordered persons are being treated as in-patients in the psychiatric wards of the general hospital. The safe-guarding of the patient's financial and business affairs would be the special concern of the director of the clinic acting jointly with the secretary of the hospital. This precaution will prove to be as necessary as it is important and no patient must be allowed to sign any document without the knowledge and consent of the two members of the staff indicated.

If the clinics be wisely administered, they will prove to be centres of highly educative and instructive value to the public generally, in disseminating greatly-needed knowledge as to the possibilities of preventing mental disorders and in propagating sane views concerning eugenics with the object of limiting the procreation of the mentally unfit. On no sociological matter is the public more in urgent need of enlightenment than on the subjects just referred to; and if the function of the clinic began and ended there, it would amply justify its existence.

Assuming that the clinics are controlled by broad-minded, commonsense physicians, untrammelled by the teachings of the latest school of post-futuristic psychology, then we may hope to see in ten or fifteen years' time a great decline in the incidence of mental diseases in the community, particularly in those of an hereditary type.

The ideal of the psychiatric clinic should be prophylaxis. The association of such clinics with a general hospital permits of more valuable scientific work being done than is possible in a mental hospital. In the former there is such scope for organized team-work, with the additional aid given by the various laboratories for exhaustive examinations and research.

A psychiatric clinic would not be complete without its quota of field-workers whose province it would be to visit the homes of the patients and the places where they worked, to collect and to collate facts to establish a knowledge of the social and industrial causes of mental diseases, such as insanitary surroundings, home conditions, bad factory and work-shop environment, under-feeding and improper dietary, especially in regard to children. The field-workers would collect other statistical information and under direction would act as advisers to the public as to prophylaxis, in much the same way as do the nurses at the baby clinics. Much has yet to be learned with regard to the social and industrial causes of insanity.

The clinic will doubtless give facilities unobtainable elsewhere for the intimate study of mental diseases in all their aspects. The objects should be to develop organized research into the causation of such pathological conditions and the introduction of hospital treatment for all acute and recoverable patients. The provision of psychiatric clinics invites those who suffer from nervous troubles of every kind, to seek early relief quite voluntarily and without the restraining drawback of certification, just as other patients go for treatment of physical disorders. This will prove an inestimable boon to the public. The clinics will also fulfil an important civic function in being centres for the scientific estimation of the mentality of the mental defectives and backward children sent from the major and minor courts, from schools, reformatories and elsewhere. Advice as to the therapeutic measures most suitable for each individual case will be given at the clinic. There is a vast, untilled field awaiting cultivation in this respect.

Much valuable help will be afforded students for acquiring a working knowledge of psychiatry without encroaching unduly on their crowded hours of study as at present, as not the least important advantage of these clinics is the easy facility they provide for clinical teaching in mental and nervous diseases. Similarly they will undertake post-graduate instruction for the diploma of psychiatry and neurology, in the granting of which Melbourne will soon follow the lead of her sister University in Sydney.

In addition to the existing out-patient departments there should be provided within a comparatively short time an in-patient block. This at the Alfred Hospital, Melbourne, where there is sufficient land available and with which the writer is identified, should take the form, it is suggested, of a series of open-air dormitories constructed on ordinary sanatorium lines with the necessary adjuncts and placed in the centre of as spacious a garden as possible where exercise could be taken, the whole to be surrounded by an eight foot wire-mesh fence. Two such open-air dormitories each containing eight to ten beds, with two smaller tents having five beds each for

noisy excitable patients (one set of tents for each sex) would probably prove sufficient during the first few years, perchance longer.

Opening out from each of the small tents there should be provided a bathroom for the administration of hydrotherapy in the form of the continuous hot bath for manicured patients.

The adoption of such tents permits of that constant observation which is so necessary in efficient mental nursing.

As adjuncts it will be necessary to have in each division a tent fitted up as a combined dining-sitting room with a scullery and having like the large dormitories wide eaves on all sides. Under these eaves would be a row of lockers (used as seats) in which the patients' clothes and napery of the wards could be kept. The dormitories and day rooms will be heated by steam radiators. Attached to each large dormitory and opening into it should be a sanitary annex, a bath-dressing room containing two shower baths, but no plunge baths, and a row of washhand basins.

For the preparation of hot milk and other sick diet by the night nurse a kitchenette opening from each large and small dormitory would be required; in this room would be kept the medicine cupboard. A noticeable feature in the hospital treatment of mental and nervous patients is the substitution of continuous observation for the archaic single rooms and padded cells of the present-day asylums. Isolation at night which is so characteristic of the ordinary mental hospital methods, finds no place in the psychiatric clinic. Isolation stands condemned by its many disadvantages and is far-removed from the humane hospitalization of mental nursing.

If a patient prove a disturbing element to the others in the dormitory, a portable screen can be placed on either side of the bed without interfering with adequate observation.

In connexion with the two small dormitories there must be a bath-room with two plunge baths for hydrotherapy.

It will be found desirable to make use of three types of bedsteads: the ordinary hospital bed, a cot-bed with movable sides and ends padded with cushions and pillows and a floor-bed consisting of a wire mattress. These latter two forms of bed are very serviceable for restless senile patients, general paralytics and epileptics, whose liability to injury is thereby greatly lessened.

Examination rooms for psychological testing and for the practice of psycho-therapy in its several forms will have to be made available. Full use would be made of the existing laboratories connected with the hospital, but as in the near future neurological and psychiatric work will be carried on conjointly by the one staff, it will be found essential to have well-equipped special laboratories for scientific investigation and research, for example a pathological laboratory embracing rooms for experimental work in normal and abnormal psychology, also rooms for bio-chemical, bacteriological and cognate investigation. As one of the important functions of the clinic is to provide instruction both ante-graduate and post-graduate in neurology and psychiatry, one of the rooms, capable of being darkened for lantern demonstrations, would serve as a lecture theatre.

DR. RALPH NOBLE referred to the four types of clinics, (i.) psychiatric clinic as at the Johns Hopkins Hospital; it was a separate wing close to the general wards and the public went to it more freely than elsewhere. (ii.) Psychopathic hospital as at Boston or Kraepelin's clinic at Munich or Maudsley's Hospital, London; it was isolated from other hospitals; students suffered thereby and the public regarded it as next door to an asylum. (iii.) Neurological and psychiatric clinic as at Rupprecht, separated from the hospital, but the two branches assembled thus increasing the quality and value of research. (iv.) Neurological hospital as at Queen's Square, London. This was the best teaching in the world, but neurologists became too materialistic; the student got no conception of psychology but only of neurones.

Of these classes, the third kind was best attached to a large public hospital. A social department was essential in connexion with the out-patients' department and convalescent homes would be also valuable to complete cure.

DR. A. W. CAMPBELL and PROFESSOR J. P. LOWSON both agreed as to the necessity of neurologists and psychiatrists working in conjunction.

#### STAMMERING AND ITS INFLUENCE ON EDUCATION.

By T. GARNET LEARY, M.D. (Edinburgh), F.R.C.P.E.,  
*Sandringham, Victoria.*

##### What Stammering Is.

THE external aspect of stammering is familiar. The stammerer makes contortions, stutters—p-p-p *et cetera* and undergoes unaccountable labour in his attempt at normal speech or he may abandon the attempt. Obviously the coordination between the organs resulting in speech is very imperfect. It is important we should not think of this defect of coordination in terms of mechanism only; there are conditions of further disturbance. Whatever the psycho-physical origin of stammering, it is the experience of stammerers that the condition develops on psychic lines, continuing and accentuating the trouble.

Stammering is not controlled by the will; nor, on the other hand, is there physiological defect requiring attention. But the stammerer generally possesses a definite psychasthenic make up, an inborn tendency to stammer. In cases of stammering, whether consequent on the above pre-disposition or whether brought about by imitation or by shock, the basic characteristic is the psychic condition; and, however the origin may be, the problem of treatment is almost invariably to discover to the sufferer the mental conditions of control.

Stammering is not coincident with any other specific peculiarity of constitution, such as precocity, diffidence, but stammerers vary in interests, in temperament and physique. The predisposition, it appears, is simply to stammer. The complexity of the speech mechanism considered, it is not surprising that a defect in coordination may show itself. And when again the close relation between speech and the fine nervous mechanism is remembered, it will be understood how "nervous" conditions arise, with consequent functional disturbance—diversion of mental energy to the affliction, with psychic storms and psychic lining. The future of stammering in a child depends greatly on the environment and the experiences

through which he passes. An originally slight imperfection in coordination may multiply in the mental world. Increasing stoppage and repression may come with developing self-consciousness. The stammerer cannot comprehend the nature of his bondage; he finds his conscious efforts largely unavailing; he becomes imbued with the idea that he cannot speak and is a prey to fear.

#### The Stammerer's Psychic Condition at School.

It is fundamental that the teacher look behind speech stoppage and speech trouble and understand that the stammerer is thinking and feeling in a definite way. Properly conceived, the stammerer's inability to make speech normal is an inability to cope with the environment. A combination of memories, influences and present sensations is overpowering when any real attempt is to be made; he erects a pedestal of fear and with this false eminence cannot come and run lightly in the normal ground below, as is the wont of other children. To express himself so is more than he can expect of himself. The point is not his inability to speak, but his dread of speaking. So important is speech in life that the desire for its abandonment is serious and is apt to induce morbidity. The demands of school work are recurrent and serve to keep the stammerer reminded of his trouble.

Let readers imagine themselves abortive in the daily circle of acquaintances, oblique in and making failures in conversation; under repression where common interests are held with others; the augmentation of the complaint as the desire to speak increases; awkwardness and dread in a festive room—all this continuous in its importance, with control very far; and the galling consciousness sometimes forgotten by very acquiescence. Perpetual restraint, mortification from an otherwise most ordinary occasion, attempts at concealment, endeavours beyond observation to overcome, hopes proved impracticable, fear to speak while physically able to do so—these things dog the days of the stammerer. The power for negativeness stammering may be can thus be indicated.

Let readers again imagine themselves in the entanglements of the stammerer, but this time in the situation of children who are under authority which there is no gain-saying; with recurring tasks bringing recurring mortifications, either from failures or excuses; paralysis from a master's question; dread from expectation; being on tenterhooks for some emergency; the seeming miracle of finding anyone who understands. The plight of the intelligent and sensitive stammerer is such. The writer can view his progress from class to class as marking stages in the history of stammering—the period of mortification developing with self-consciousness; the period of the custom of dread: the period of dread in control. To excuse the stammerer his tasks may accentuate his trouble: he is treated as one who is different from others. The writer has marked an act of kindness, inaugurating a period of excusal from reading as an epoch in the history of his stammering. The stammerer feels such relief to be intolerable. Yet the alternative is setting out into that ocean of entanglement—speech. The writer remembers a very well educated teacher, referring to stammerers in his class, saying that if these stammerers would properly form their mouth *et cetera*, he did not see how they could not speak. Physically the stammerer can, but

psychically he cannot speak. Insight will arrive as the perception of this mental chaos or idea of powerlessness. At any moment the stammerer is like to shrink into his cloak of fear. The task is to unfasten it and have it fall away, while the stammerer fastens together a new coat of confidence.

#### Some Educational Aspects of Stammering.

The stammerer's inability in more or less degree to share in some kinds of work—reading, oral answers, questions—is obvious. There is here a lack of normal development.

What is not obvious is the continuous waste of mental energy which characterizes stammering. It is essential to remember that stammering is a functional not an organic defect; energy is turned into wrong channels. This may come about in various ways; for example energy consumed in anticipation, with mental strain; waste through abnormal methods of doing things; attempts to overcome; mental and emotional strain and derangement caused by misunderstanding and wrong impressions.

As the task approaches, the stammerer's hours pass differently from the hours of other people. All things proceeding move towards the occasion—mysterious in its bondage—that is some days or hours ahead. The occasion is magnified into an enormity. The stammerer would be cool, but cannot be. The event will be the last thing thought of at night; the day will open towards it in the morning. A sentence, a few words, constitute an impalpable barrier, surmountable only by impossible depths of ease. The stammerer wishes that the occasion may be exploded into non-existence, that he might feel free. Anticipation, as well as arising greatly in special occasions: the stammerer is in the trepidation of uncertainty.

The stammerer prepares himself to meet situations, for example before an interview of importance he may make assiduous endeavours to calm himself and preceding that, has no doubt practised the statement he will attempt to make. He may take pains to avoid vocal expression; thus he will write letters or notes where spoken statements will do and be thankful that so much work is conducted on paper; he may wish the end of telephones. The normal situation may be avoided. He may carefully arrange coincidences; for example he may remain for an hour outside a friend's place, because he dare not ask at the door and meet his friend accidentally some blocks away. He does not like introducing or being introduced. He makes vain attempts at concealment. He intersperses humorous remarks because he cannot hold forth seriously; he makes comments without elucidating them; he agrees or adds an inanity. Along such lines an "inferiority" complex develops; and the possibilities opened through active competition with one's fellows are seen by the stammerer as a spectator or stored by at present in his hopes.

Intelligent stammerers make lavish attempts to overcome their difficulties.

Stammering thus results in hindrances and hurts to the growing mind which being plastic experiences humiliation keenly. The hindrance in normal development is experienced along the lines of spontaneity, cheerfulness, pleasure in normal occupations. There is often a depri-



vation of rational association. The stammerer acquires at a very dear price a sense of sympathy for affliction.

Stammerers are on the average above normal intelligence: yet the impression is easily gained that the stammerer is a dullard. When school time duty is to be done, the stammerer's lot is not a happy one. It is precisely to the happiness, to the ease and relaxation of the stammerer and the development of confidence and delight in speaking that attention must be directed. Then the speech contortion will cease to be audible to the ear, visible to the eye.

#### Further Considerations on the Stammerer's Psychic Condition.

As the affliction continues, the central core remaining despite the stammerer's efforts, the winning and maintenance of the prize of normal speech appears more and more to lie over and in strange ground, though he may visualize him in this coveted field. Hope continues frustrated over a surprising length of time until through sheer wearing down a kind of contentment is purchased and stammering becomes the constant companion. There may even be a morbid satisfaction in habituation to the groove and the stammerer may not at every time care for release.

It may be that stammering lies as a burden concealed even from intimate friends, the stultifying influence of which they are unable to gauge. The stammerer is surprised it should not be apparent that the psychic troubles lie beyond this parody of his speaking self. Child bondage may pass to adult bondage.

Stammerers feel that some remedy is wanted other than any suggested to them. The deep sense of gratitude which stammerers feel to anyone who mentions their trouble kindly and encouragingly to them, is certain evidence of their burden of repression.

#### Attitude of the Teacher.

The teacher is busy and it may seem to him a small thing to label the stammerer as a child defective in speech and make allowances accordingly. But it should be obvious now that this attitude has no true relation to the actual condition. The first essential is the recognition of the repression and dread. The attitude should be one of sympathy and knowledge. The stammerer should feel there is no reserve of repression or any feeling of desire of which the teacher has not knowledge. The stammerer should feel able to avow frankly the condition in which he is. From this great relief will spring feelings of confidence, self reliance and a lively sense of new possibilities. The teacher should be instructed in corrective measures.

#### Corrective Measures.

Corrective measures are undertaken (a) with a view to reaching the psychic centres, (b) to re-establish harmonious interaction of the respiratory and articulatory muscles *et cetera*. The two processes interact and the need may be for elemental re-education.

The stammerer should cultivate a pure musical tone or a child-like rhythmic cadence. The vowels are to carry the burden of sound and are to be greatly prolonged. Stammering in this manner of speech is, of course, im-

possible. Because of the exaggeration which is desirable, the stammerer may be herded with others similarly afflicted or placed with an instructor. When speech is given and kept on a vowel basis, the stammerer is led to cease thinking of the consonants as being of importance. Consonants cease to be substantive, but essentially possess the attribute of transition from vowel to vowel.

Ultimately upon the stammerer himself depends the use he makes to this key to his determinism.

The cadence should be child-like, simple and deliberate. A process of re-education is required, of more or less working detail. However, it may be difficult for some, especially adults, to adapt themselves easily to such a requirement and the desired cadence may vary according to circumstances, with always the detection of vocal incident disposing one to a stammer.

The patient is to be encouraged also to think of rhythm and form an adequate conception of its possibilities of intrusion into all work-a-day concerns. In this way psychic conditions of permanence are developed. The patient is to be encouraged to think of working this rhythm into his very fibre, so that speech is woven after a new pattern. In such a way will rhythm be perfected and pass undetected in ordinary conversation. A rhythmic rise and fall may become the simple dominating element controlling a given situation.

It is essential in treatment that the stammerer enter heart and soul into his practice and that all reserve or disinclination be broken down. The old form of speech is to be rigorously guarded against. Complexes, spasms manifesting themselves must be resolved and the stammerer practically deal with each in a rhythmic way. In his treatment it is indispensable that he discover the adequateness of the basis of cadence and feel fit to apply it in daily life.

The "herding" of stammerers is most desirable. Here reserve may be completely broken and a new complete capability discovered. The atmosphere is conducive to experimentation by the stammerer at leisure. The pent up desires, the old wishes can here be carried into effect. By a working unity in the class old ways in speech will be rigorously avoided. The basis of fear, the irrational controlling force of stammering, is removed. Before, the stammerer has had only half a chance.

The stammerer is able as it were to exercise in and from the subconscious that world where there have all the time been things to say, while the full consciousness has been abortion and vitiation. A coincidence between sub-conscious desire and conscious expression is established. The stammerer finds himself a substantial principle of unity.

Herding is advisable in an interval from customary school work. The stammerer has not been in such an environment before. New forms of speech carry him into a new world and he can in this environment win entire freedom and at least a new basis of operations beyond.

It is the duty and province of education to assist in a complaint so rooted in the psychic.

Patients were presented to exemplify the methods explained. All were free from stammering, but all used the slow, rhythmic method with limb movements in synchrony.

## PSYCHO-THERAPY IN PRACTICE.

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Psycho-therapy is as old as humanity. It began when man, with desires expanding, but powers insufficient, finding self-doctoring futile and facing primitive dissatisfaction, turned for relief to his imagination and his environment. This he sought and often found in things such as fetishes and formulae or in persons, holy, wise, or more or less skilled. Thence onwards he has travelled all the way up to organized systems and accredited schools. But it is only his power of recognition with variations in concomitants that has altered, the end has always been the same; the individual satisfaction of all his valences. And satisfaction, it must be understood, is not necessarily either happiness or pleasure, rather the fruition of all energies, the harmonious attainment of all due ends, psychical as well as physical, on the reality with due regard to the pleasure-pain motive.

Naturally the present position is very complex. It involves heredity, psychical as well as physical, comparative physiology and anthropology, the relations of mind to matter, of instinct to intelligence, of the conscious to the sub-conscious, of the place of the emotions, the intelligence and the will, of the endocrine glands and the sympathetic nervous system; upon each and all of which each must satisfy himself. My own views may be sufficiently gathered from my paper on the Basis of Psycho-therapy, published in THE MEDICAL JOURNAL OF AUSTRALIA of October 21, 1922. There is advantage, also, in co-ordinating, if possible, all under one guiding principle—just as matter and life have been brought under their unities of origin. To state my own opinion upon this even more open question without dogmatism, I may say that I find myself a psychical monist and regard it probable that our individual minds are, so to speak, atoms of an infinite supreme mind, though at present confined in a limited material setting, informed as to realities by a few imperfect scouts and reacting through material expressions, but possibly destined after trial and testing ultimately and always to use their little freedom of will in accord with the supreme.

Turning from theory to practice, it would be easy after some forty years of experience to narrate "wonderful" cases. But such only half meet the situation. Even quacks can do the same. More profitable it seems to me will it be to review critically underlying principles and upon them to base enlightened and sustained attempts after prevention and treatment.

All psycho-therapeutic procedures may, I believe, be reduced to three, analysis, suggestion and re-education.

**Analysis.**

Analysis is the use of the intellect to ascertain facts, to determine conditions and to formulate procedures. Here it must be remembered that all our knowledge is only relative, deals with forms and appearances and not things and realities and that even its most organized form, science is ever changing and never final. Helium in physics and relatively in astronomy sufficiently show how

fundamental the additions that are made from time to time.

In psycho-therapy two intellects are concerned, the operator's and the patient's, and, of course, the ingenuity of the former should be used purely for the needs of the latter. Psycho-analysis is thus doubly personal. It is interesting to note that whilst Freud bases his analysis on a fundamental emotion, Coué, ends his suggestion with "K'now thyself!"

In my experience each patient should suggest his own analysis and any set plan is inadvisable. Further, every patient should be approached from below physically, as well as from above psychologically. Physically the clinical basis laid down in my "Text Book of Therapeutics" (Volume II., pages 609 to 615) gives in my opinion all that is necessary by way of history, if followed by the systematic and up to date clinical examination, special and general, therein indicated. The psychical side, however, demands at least equal attention. This seems well summarized in Haydn Brown's "Thought Analysis," and in Wm. Brown's "Autognosis," from either of which sufficient details may be suggested for the particular case. Haydn Brown considers it sufficient to know troublesome thoughts, not all that is in the subconscious mind, to get down to the subconscious, if necessary, but by relaxation not hypnosis, then to leave the patient to analyse himself, conducting a private even unconscious analysis and applying his own arguments. Having cleared the thinking apparatus, he is encouraged to follow a quiet train of thought, easily and accurately, without contradictions and with simple examples and above all never made to try to think or to try to do, and avoiding rather than seeking the sexual problem.

William Brown's autognosis is carried out by long talks in which the patient describes his own feelings and thoughts prior to his illness, his present mental conflict, his hopes and fears for the future and his regrets for the past. His memory is then led back to past emotional registrations, specially those attended with failure. The psycho-therapist then looks at his wishes, longings, interests, ambitions and personal relations from all points of view, promotes adjustments and seeks to eliminate contradictions. Thus stimulating the healthy mind, the symptoms are outgrown. In recent cases "psycho-catharsis" may be useful. This differs from psycho-analysis, he says, in all forms, does not involve its theories and includes education, which is the drawing out of the patient's latent powers in a way that is not incompatible with self-reliance and is applicable in all cases. Speaking shortly this psychical inquiry involves all pertinent interests, motives, experiences from the point of view of both development and environment. Causation it should be remembered is rarely single, save on great occasions such as war, and even then the situation generally becomes complicated sooner or later by questions of compensation or of "vicious circling" or "resistances." In all these respects each case is a case to itself and there are no watertight classifications; yet it is naturally of value to recollect the main classifications as generally recognized. For pushing analysis into the sub-conscious, the main methods are the "relaxation and mild hypnotism" of Haydn Brown, the "auto-hypnosis" of Coué, the deep

hypnosis of Bramwell, and the "psycho-analysis" of Freud. Anything like deep hypnosis is now almost universally abandoned by almost all advanced psycho-therapists. Coué's plan has the advantage of using the idea involved as the medium of suggestion. In my experience, however, the need of thus analytically "tapping the sub-conscious" is rare; therapeutically the sub-conscious requires rather to be influenced by indirect than to be controlled by direct suggestion. Freud's psycho-analysis calls for special attention. It must suffice here to say that his view of causation is now abandoned, save by a few extremists, in favour of the wider and more applicable post-Freudian, that his methods of procedure (free association, word association, symbolic interpretation, dream analysis and so forth) are now generally held to be rarely necessary, often misleading, at times dangerous and almost always cumbersome and tedious, whilst his views on repression and mental conflicts seem largely over-statements and in some cases even contrary to definite laws. The value of his contribution to the position is, thus, that of an investigator not of an interpreter and at bottom his methods tend to an intellectual misdirection of fundamental suggestions. His "symbols" again can prove anything that is in the mind of the operator. And as regards actual results, it would be amusing if it were not pathetic to see psycho-analysts laboriously seeking and proudly proclaiming results that are often producible to even greater advantage and in a fraction of the time by simpler forms of suggestion.

After all treatment by analysis is pre-eminently the province of an educated profession not of the academician or theologian.

#### Suggestion.

Admittedly fundamental in life and education, suggestion seems equally fundamental in treatment. But most would-be operators have much to learn as to its nature, its mode of action, its limits and its relative position as regards both patient and operator. Of course it can be and largely is used without any exact knowledge, but such unenlightened use does not become a learned profession.

Strange to say there are still some even of the profession who regard suggestion as "a mere professional confidence trick": to the thorough-going psycho-analyst it is simply "blind transference with affective displacement," dealing with an unconscious desire originating in the child-parent relationship; whilst to others it is only "the acceptance of convictions, under the instinct of submission." But a wider view discloses much more. It seems bound up in the emotional side of all sensations, is fundamentally sub-conscious and one at least of the natural means by which the psychical accepts and reacts to the physical. Everything, indeed, carries to the mind its own cargo of suggestion. It is the psychical hormone.

Whatever view, however, we may take, it certainly can both produce and remove dominant ideas, repress as well as express, dissociate as well as associate and affect all mental and through them all physical mechanisms. To many at least it seems very largely to take the place left in the sub-conscious by the progressive diminution of attention thereto, which comes with his progressive development.

In the elucidation of suggestion, Coué and his school take much the place held by the Freudists in analysis.

According to Coué suggestion is the sub-conscious realization of an idea, intra-individual, not inter-individual (that is, not starting outside and ending inside) and puts into operation an ideo-reflex process which is natural in all, but specially potent in childhood and certain plastic temperaments. His main contribution is that it acts through the imagination and not through the will. His description of its working is illuminative and apparently in the main reliable. His four "laws," though perhaps not uniformly applicable, are worthy of every consideration. (1) Concentrated attention or obsession is necessary for realization. (2) Powerful emotion assists greatly. (3) In conflict the imagination always defeats the will. (4) Once accepted, the sub-conscious finds the way. In practice, also, we have to discriminate between spontaneous auto-suggestion which is in all and can be cultivated by all, reflective auto-suggestion which can be consciously practised and induced or hetero-suggestion, such as hypnotism, which is started from without, but which really acts only through auto-suggestion. Another specially fruitful contribution is his use of the idea itself and not of any physical means in the suggestive manipulation of the sub-conscious. No one who has practised suggestion for any time, but must in my opinion confess much gain from Coué's elucidation of these positions.

However regarded, suggestion plays the essential part in psycho-therapy. It is true that Dubois laid stress on persuasion and Déjerine on emotion, but in both it was suggestion that did most of the good work. Its systematic disuse by so large a section of the profession seems due partly to ignorance, partly to discredit from hypnotism and partly to the insistent claims of psycho-analysis (itself mainly operative through suggestion).

Personally I have always been an advocate and user of suggestion together with the amount of analysis already referred to. And I have always advocated not any particular plan, but the application to the individual case of "the best suggestion, in the best way and at the best time" and have always regarded drugs, procedures, psycho-therapy and environment generally as useful largely, at times mainly as carriers of cargoes of suggestion. And without raising them to the dignity of laws, I have always recognized it as true not only that cure can be and as a rule is outside volition, but that volition often impedes cure and that the cause of disease is often a dominant idea, the removal of which is more or less easily effected by suggestion, even without its cause or nature being known to either myself or the patient, though, of course, some knowledge or even suspicion of it is invaluable in directing subsequent procedures. We must never forget that, as Bacon said: "*Scire recte est per causas scire!*" To me, however, it is usually the patient who unconsciously suggests what I then formulate into the future line of treatment. I agree also entirely with Coué in the stress to be laid upon "fine points," such as the avoidance of all suggestions of feebleness or failure, the adoption of everything, words, attitude *et cetera* to the conditions of the time and in regarding want of success as frequently more the fault of the operator than of the patient, owing to the former's failure in minutiae required in the particular case. Personally I have seldom found it necessary to "tap the sub-conscious," except by



inference or by questioning in prepared moods or related conditions, though I am inclined to believe further efforts in that direction may be of assistance in a few complex cases, possibly more in chronic civilians. On the whole without committing myself to Coué's views in their entirety and without regarding his general and special formulæ as essential or following his procedures as a routine, I am satisfied that Coué has by his suggestive use of the idea involved, by the light he has thrown on suggestion generally and by his advocacy of auto-hypnosis on a greater scale, very materially advanced the remedial as well as the educational value of auto-suggestion.

#### Re-Education.

Re-education implies previous education, its limits and its extent. The predominant part played by suggestion in all education as well as in the formation of habits, good or bad, has been already referred to. Therapeutically, re-education may be broadly defined as the taking of all advisable steps for the fixation of the good and the eradication of the bad and for the maintenance of the systemic satisfaction already secured or at least of the nearest approach thereto that is possible in the case. Being personal, it has to be gathered from the history and needs of the case rather than as a matter of any routine or from following any system. The new tendencies, the new points of view, the new convictions and the new reactions as ascertained by analysis, have all to be satisfactorily met. Re-education is thus the most difficult, as well as the most intricate portion of psycho-therapy, but upon its successful manipulation the permanency of results mainly depends. Frequently to restore is more or less easy, but always the crux is how to maintain. Of course we have, also, to deal with indefinite future contingencies, as well as with past happenings and at times it is impossible materially to direct or even to influence these factors. In such cases, however, it is well to remember the possibilities and value of the law of compensation which is a necessary corollary to those of self-preservation and self-reproduction. Good may be possible in other ways than the apparently called for.

Again our aim may have to be not an impossible best, but the next best or even the nearest possible thereto. And in practical application it is always wise to remember not so much that the subsidiary means at our disposal are almost innumerable, but that unless psychically used each and all may be used in vain for months, even years. This is the true place in psycho-therapeutics of isolation, rest, supraliment, massage, kataphoresis, diathermy, radiant heat, of all forms of electricity, all sorts of baths, almost all drugs and of a number of ingenious orthopaedic devices. Never perhaps was this seen on such a scale as in the late world-war. The absence of appropriate suggestion from each and all of such specially before fixation of symptoms has led to the case being regarded as organic or, more correctly, has intensified an erroneous diagnosis, frequently made an almost unbelievable amount of difference between failure and success, even after a lapse of anything up to three or more years. In addition to "the best suggestion, in the best way and at the best time" all these progressive attempts to rebuild both mentally and physically should always include an atmosphere of hope and cheerfulness. Re-education thus is a

much more laborious procedure, calls for wider powers and is slower in effects than either analysis or suggestion. But in most it is necessary for permanency. Yet too often we still find it resorted to and relied upon, at times and in places where appropriate suggestion might easily have brought rapid, even instantaneous "resurrection." Patients who can be "resurrected" by suggestion, such as stammerers, should not except in cases of failure be handed over to re-education.

#### Personal Experience.

My own personal views and experience can be gathered from the references given at the end of this paper. A very brief résumé alone is here called for.

#### Pre-War Experiences.

I have dealt in psycho-therapy ever since my first paper on "The Psychological Aspect of the Sexual Appetite" by making use of analysis as already defined, suggestion and re-education. My practice has been a progressive widening in these directions, mainly relying upon a careful history, psychical as well as physical, a full examination, neurological as well as somatic, and a full use of suggestion as already defined. It lacked of course, the advantage of any systematic resort to anything like Freud's mental mechanisms, with its inquiry into the sub-conscious and anything like such a clear understanding of suggestion as is now outlined by Coué. Still results as a rule were just as prompt in many cases and as good in most as those which I obtain at present, witness the series given in my text book.

#### War Experience.

During the war I was for two years in charge of over one thousand soldiers with war neuroses in all forms and familiarized myself with the views and procedures of the best English and French authorities.

In England I visited Denmark Hill under Mott, Kensington Gardens Hospital for Officers under Bond, Netley and Newton Abbott under Hurst, Maghull under Raws Rivers and Myers, Golders Green under Fearnside and Oxford under W. Brown. Each, of course, laid stress upon some special aspect of treatment, notably Hurst upon intensive suggestion, but hypnotism was conspicuous by its absence. Only Maghull followed a careful and thorough psycho-analysis, whilst all utilized suggestion and re-education. Differences were mainly questions of class of case, personal experience and facilities—the man and the means. In addition there were recuperative homes, out-patient clinics, country rest homes, special institutions for special physio-therapy psychologically applied (notably Portland Square) the model Enham Village Centre established by the Ministry of Pensions and the new departure of orthopaedics at Shepherd's Bush under Jones where interest, motive and utility directed previously accepted procedures.

In France I first visited the three general neurological hospitals at Aire, Wisques and Ebblingham in the British Army area and found that Myer's "80% returns to the front" had been altered to more than "80% to the base," now that temporary "knocks out" and mild cases were satisfactorily discriminated at the front, leaving the men with severe confusional and emotional affections associ-

ated with or without wounds, burial, gassing *et cetera*, to be sent to the rear as more or less permanently unfit.

As regards French treatment generally, I visited selected centres in Besancon, Salins, Bourg, Seligniac, Beauvais and Paris, under Boisseau, Roussy, Babinski, Pierre Marie, Briand and others. Their patients were distinguished by prompt differentiation, group isolation, thorough preparation and treatment by suggestion, occupation *et cetera* and, naturally perhaps there was a much larger proportion of hysterical manifestations. As a rule, their methods were object lessons in precision, promptness and reliability and reduced errors and difficulty to the minimum.

My own two years' treatment of patients at Dartford was directed toward the removal of abnormal reactions, to reassociation of ideas and emotions and to readapting and rebuilding. In analysis we sought to ascertain the dominant factor and to replace repression or regression by normal expression; in suggestion to use at the most appropriate time and in the best way and in environment to offer interest, motive and satisfaction. Our patients entered an atmosphere of hope and cheerfulness; our wards were the nearest approach possible to homes, our occupations, amusements and furloughs were all specially selected and physio-therapeutically we were very well served. But many of our patients had become stigmatized by months of non-treatment and others were such as could obtain no swift cure and had a dubious prognosis, though a late recovery could usually be expected and usually occurred. Still excluding mental patients, there are a certain number who from strain or emotional overthrow as well as from commotion and brain trauma would always remain vulnerable and to some extent incurable and such has been the result up to date.

#### *Post-War Experience.*

My post-war experience has been in the same direction. At McLeod Military Hospital I had under treatment one hundred and eleven "shell shock" patients (properly diagnosed it is still a good description) one hundred and thirty-two psycho-neurasthenics, twenty-six confusional or mental patients and fifty-one with cardiac, gas or other complications. Of 390, 239 were discharged in some eight months.

Finally as regards civilian patients my experience and views will be found in my paper "War Neurosis and Civil Practice" (THE MEDICAL JOURNAL OF AUSTRALIA). Briefly stated, whilst mild civil cases differ in no notable way from mild war cases, the severe cases are usually more complex in causation, require more analysis in diagnosis and, other things being equal, need longer and more varied treatment. But even in them, there is no "royal road" to recovery. Principles and treatment are the same.

True psycho-therapy thus requires the combination of wide clinical experience, up to date knowledge of neuropathology and a familiarity with psychical mechanisms and procedure. One may conclude by asking the question: Has the profession fairly prepared itself for its rôle of guide and restorer? There can be, I am afraid, but one answer.

### VARIATIONS IN THE "MUSCLE-PRESSURE SENSE" IN NEUROLOGICAL DIAGNOSIS.

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DISEASE is manifested by symptoms and physical signs. Physical signs constitute the evidence obtained by the usual methods of examination of abnormalities in the shape, size, position, structure, consistence, movements and contents of accessible organs.

A symptom is a disturbance of function of some organ or system and since the action of no organ or system can be disturbed except in respect of its proper function, that is it cannot discharge any functions other than its own, it follows that symptoms in any organ must be disturbances of function by way of excess or by way of defect. This is very evident in the nervous system whose main functions are sensation and movement. There may be pain which is sensation in excess, or analgesia which is sensation in defect; there may be spasm which is muscular contraction in excess, or paralysis which is contraction in defect.

I desire to-day to draw attention to some phenomena of nervous disease which are to be discovered in the simple preliminary routine examination of the nervous system, before any refinements are undertaken, such as investigation of the special senses or the use of the ophthalmoscope. In such a preliminary examination, besides sensation and voluntary movement, we make some test of the other functions of the nervous system, namely co-ordination, both sensory and motor, reflex action, superficial, deep and sphincter, nutrition and tone.

It is usual to begin with voluntary movements, taking in order those controlled by the cranial nerves and then those of the spine and extremities. I am not at present concerned with movements.

Sensation is generally classed as "subjective" and "objective," with subjective pains and paræsthesiæ I am also not concerned. The rather contradictory term "objective sensory disturbance" refers to alterations in sensation which are only detected on more or less expert examination. Of these there is a considerable number, since the sensations of touch, pain and temperature are all recognized together with more delicate appreciations, such as stereognosis.

In the preliminary examination postulated in which only gross abnormalities are sought for, the sensation of pain is generally the only one investigated; the presence of hyperalgesia or analgesia of the skin is revealed by sensibility to a pin-prick. The best method of investigating is to make a series of pin-pricks along a line which crosses a number of segmental areas, as from Poupart's ligament to the clavicle, asking the patient to indicate where changes of sensibility occur or observing any flinch. Hyperalgesia or analgesia of muscles is revealed by sensibility to pressure, commonly known as the muscle-pressure sense. It is the importance of this examination to which I wish to draw attention.

After movement and sensation the reflexes, coordination, nutrition and tone are investigated.

The muscle-pressure sense does not call for any very exhaustive examination. It is sufficient to grasp the pectoral muscles, the biceps and the calves firmly between the thumb and fingers and inquire as to their tenderness or note any flinching which may occur. Also pressure should be made over the muscles of the abdomen. The muscle-pressure sense may be heightened or depressed, giving rise to "sensation in excess" or "sensation in defect."

Outside disease of the nervous system proper tenderness of various muscles constitutes a valuable indication of visceral disease in many instances; as for example the pectoral, sterno-mastoid and bicipital tenderness on the left side in heart disease and the localized areas of abdominal tenderness in gastro-intestinal disease. But I am now concerned with variations in this sense in uncomplicated nervous disease.

There are two common diseases in which the knee-jerk is absent, *tabes dorsalis* and peripheral neuritis. If the diagnosis lies between these two, it can be settled in one moment by testing the muscle-pressure sense. In peripheral neuritis, especially alcoholic neuritis, the calves are generally tender to deep pressure. In *tabes dorsalis*, however, the sensation of pain on deep pressure on the calves is always much diminished, in most cases quite abolished. This loss of muscle-pressure sense is by very far the most constant and valuable single sign of *tabes*. Personally I have yet to find it absent in a case in which there were other signs of *tabes* sufficient for diagnosis, whereas any other sign, Argyll-Robertson pupil, loss of knee-jerk or the occurrence of lightning pains, is frequently absent.

In Table I, I have set down the common symptoms and signs of *tabes* together with the history of syphilitic infection and the presence of a positive Wassermann reaction as I have found them in the first dozen tabetics whose notes I could find. It will be observed that though the Argyll-Robertson pupil, lightning pains, loss of deep-reflexes, trophic ulcers, Charcot joints, incoordination and positive Wassermann reaction were often absent, the loss or at least considerable diminution of the muscle-pressure sense was invariably found.

The patients in cases 1 to 7 had uncomplicated *tabes dorsalis*, in cases 8 to 10 had general paralysis of the insane; in case 11 had Menière's disease and in case 12 had aortic stenosis and regurgitation.

In one or two of these patients the loss of muscle-pressure sense was of great value in diagnosis. Patient No. 5 was a man of about thirty, young for *tabes*, admitted to hospital for "rheumatism," which on inquiry turned out to be very suggestive of lightning pains. The pupils reacted and there was an active knee-jerk, but the muscle-pressure sense was abolished. Closer observation showed some ataxy of the hands, a small perforating ulcer under a Charcot joint, and a ++ Wassermann reaction.

The patient with Menière's disease came with a history of fits. Inquiry showed them to be attacks of vertigo and nystagmus and nerve-deafness were also present. The pupils were tabetic in character; there was some delay with the sphincters and the muscle-pressure sense was abolished. Syphilis was admitted and a positive Wassermann reaction obtained; considerable benefit followed the use of mercury.

TABLE I.

Signs or Symptoms				Case											
				1	2	3	4	5	6	7	8	9	10	11	12
Argyll-Robertson pupils	...	...	...	+	—	—	—	—	+	+	+	+	+	+	+
Optic atrophy	...	...	...	—	—	—	—	—	+	—	—	—	—	—	—
Pains: crises	...	...	...	+	+	+	+	+	—	—	—	—	—	—	—
Loss of muscle-pressure sense	...	...	...	+	+	+	+	+	+	+	+½	+	+	+	+
Loss of deep reflex	...	...	...	+	+	+	—	—	+	+	+½	—	+	—	+
Sphincter delay	...	...	...	+	+	+	—	?	?	+	?	?	+	+	—
Wasting	...	...	...	—	+	—	+	—	—	—	?	—	—	—	—
Trophic ulcer	...	...	...	—	—	+	—	+	—	—	+	—	—	—	—
Charcot joint...	...	...	...	—	+	—	—	+	—	—	—	—	—	—	—
Inco-ordination, hands	...	...	...	+	—	—	+	+	—	—	?	—	?	—	—
Romberg's sign	...	...	...	+	+	+	+	—	—	+	+	+	?	—	—
Ataxic gait	...	...	...	+	+	+	+	—	—	—	—	—	?	—	—
Wassermann reaction	...	...	...	?	+	+	—	+	?	+	+	?	?	+	?
History of syphilis	...	...	...	+	+	+	+	?	?	+	+	?	?	+	?

"½" indicates confined to one side of the body.



One of the general paralytics (No. 8) was admitted for a heart lesion, his speech suggested the mental condition and there was absence of the knee-jerk and loss of muscle-pressure sense, though on one side only. Another showed chiefly unilateral signs.

Case No. 8 was interesting from another point of view. The patient acquired syphilis late in life and had one healthy family and another one of congenital syphilitics, members of which are frequently demonstrated at the hospital.

So far as these cases go, this is contrary to what commonly occurs. The family histories are not complete, but at least three of these men have had syphilis in youth, but they have married and had perfectly healthy families; in later life they have suffered from *tabes* and their blood has then given a positive Wassermann reaction. Mott (*The Lancet*, January 6, 1923) has recently drawn attention to evidence of the existence of two forms of *Spirochaeta pallida*, the "dermatropic" which seeks the external surface of the body and is readily treated by mercury, and the "neurotropic" which seeks the central nervous system and is highly resistant to treatment. It may be that the former is at any rate more liable to produce congenitally syphilitic children.

I believe then that loss of muscle-pressure sense is the rule in *tabes dorsalis*. I have yet to see a case without it. I should be glad to do so: any one of the other common symptoms or signs may be absent in any given case and there must be some time when this symptom first appears, but in general I believe it to be the most constant and reliable indication of *tabes*. What is the reason?

The neurologists have lately settled the question of the essential lesion of *tabes*, apparently to their satisfaction. Adie, who comes from Australia, wrote a critical review in *The Journal of Neurology and Psycho-pathology* (November, 1921) of the work of Richter who found as the result of examining almost innumerable sections a primary, essential and constant lesion in which the spirochæte is demonstrable and which is a direct and local reaction to the virus. It is an inflammation of the sheath of the nerve roots and begins at a point above the sensory root where the dorsal and ventral roots converge to form the radicular nerve of Nageotte. It begins in the spaces of the sheath formed of the *dura mater* and arachnoid and spreads along the septa between the nerve bundles, the nerves degenerate, with sclerosis; the degeneration in the posterior columns is secondary.

This does not explain, however, why particular parts of the columns and particular varieties of sensation are affected in *tabes*. All men are agreed that one of the principal disabilities of the disease is the "locomotor ataxy" which gives it its other name. This is a sensory incoordination, due to the loss of sensations which normally reach the brain from joints and muscles, so that the patient is unaware of the position of his limbs in space, an incoordination which is much increased when the information derived from vision is lost by closing the eyes. Romberg's test depends upon this. If, as is commonly held, this is due to loss of afferent impulses from the muscles, the loss of muscle-pressure sense, the insensitiveness of muscles to deep pressure is easily under-

stood and might on general principles be looked for as likely to be present in *tabes*.

There are only two other conditions known to me in which loss of muscle-pressure sense is liable to occur, these are hysteria and profound degrees of paraplegia. The former may on occasion lead to confusion. During the war I had charge of a neurological centre for some months where large numbers of cases of hysteria and neurasthenia were treated. These cases may simulate *tabes* very closely. I have notes of an officer, forty-one years of age, who was knocked out by a shell, but carried on for twenty-four hours. He said that after the shock he was very weak and unsteady in his legs and passed no urine for two days. On examination eight days after the shock he had a transient squint, marked sensory incoordination, Rombergism and delayed micturition, a combination very suggestive of *tabes*, but all the signs cleared up after a few days' rest. I found a definite loss of muscle-pressure sense, indistinguishable by itself from that of *tabes* in six cases, this is, I presume, an hysterical anaesthesia, comparable to the blindness and deafness which sometimes occur.

Paraplegia is referred to below.

With regard to the contrary condition in which the deep reflexes are absent but the muscles are tender, the usual diagnosis is peripheral neuritis, but here some differentiation is required. It is quite true that in some forms of peripheral neuritis, especially the alcoholic, this complex is present; but all forms of peripheral neuritis are not associated with especial tenderness and the loss of deep reflexes and presence of tenderness may occur in other conditions besides peripheral neuritis.

#### *Peripheral Neuritis Without Tenderness.*

In diabetes a stage often exists in which the knee-jerk is absent, but there is no evident loss of power, certainly no definite loss of dorsi-flexion of the ankle and no tenderness of the calves. Within the last year at least six patients with diabetes in Dunedin Hospital had lost their knee-jerks, but though their calves were never insensitive, they did not appear to feel any more pain on pressure on them than healthy persons. Absent deep reflexes and tender muscles therefore do not form a combination which is essential to the diagnosis of peripheral neuritis.

#### *Absent Deep Reflexes and Tender Muscles in Cases other than Peripheral Neuritis.*

The following series of cases have recently been under my charge. In 1920, a girl was admitted to Dunedin Hospital with a very extensive true peripheral neuritis, involving all four limbs and one side of the face, which was of the type described by Rose Bradford (*The Quarterly Journal of Medicine*, 1919) and by Gordon Holmes (*The British Medical Journal*, July 14, 1917) during the war and the case ended, like most of them in complete recovery. Shortly afterwards, another girl was admitted with absent knee-jerks, tender calves and a cranial-nerve palsy, the same diagnosis was first made, but the evidence of intracranial trouble soon appeared and the patient died. The cerebro-spinal fluid gave no information; no *post mortem* examination was permitted and a satisfactory diagnosis was never reached.

The next case was that of a woman with the same signs in the legs, a slight ophthalmoplegia and a history of sore throat. I first diagnosed diphtheritic neuritis, but grave cerebral symptoms supervened, the patient died and at the *post mortem* examination tuberculous meningitis was found.

Since then I have seen two other fatal cases of tuberculous meningitis in all of which the knee-jerks were absent and the calves tender. An error in diagnosis by a confusion of this kind might be serious. I have not found any reference to this condition in the accessible literature on tuberculous meningitis.

A small boy was admitted to Dunedin Hospital in 1921, who had been taken acutely ill, apparently as the result of food-poisoning though this was not really the case. He was parietic in all four limbs, the deep reflexes were absent and the muscles very tender. I first thought of peripheral neuritis, though the acute onset was against this. In a few days it became evident that the case was one of anterior polio-myelitis. The very symmetrical distribution of the paresis was deceptive in this instance. Here, again the prognosis had to be considerably modified when the condition was correctly diagnosed.

I would submit, therefore, that the diagnosis of peripheral neuritis may on occasion be no easy matter and that absence of knee-jerks and tenderness of the muscles do not exclude other conditions.

In conclusion, I may draw attention to a few points in grave forms of paraplegia in which the deep reflexes are lost and the muscles are insensitive, though this condition is not likely to be confused with any other.

Experience in the war has modified opinion as to the results of complete transverse section of the cord. Previously, the dictum of Bastian, made in 1890, was generally accepted, namely that after complete division of the cord in the cervical and upper dorsal regions there is muscular flaccidity with loss of superficial and deep reflexes, reflex micturition and retention of faeces. The present opinion was given in *Medical Science*, October, 1921 ("Clinical Picture of Complete Transverse Division of the Spinal Cord").

It is held that Bastian was misled either by the early death of his patients or by the results of toxæmia. In cases in which the cord is divided aseptically by a clean bullet wound, of which there were a number of instances in the war, the reflexes are recovered in a few weeks.

In clean cases of this kind different stages are recognized. The first stage is one of reflex depression, with immediate, complete and permanent loss of movement and sensation. The tone is not changed for a few hours or days, but is soon lost and the muscles become flaccid. The reflex depression is profound and may be complete, though the plantar response may be a slow flexion, followed by a general contraction of the leg and extension of the toes. The abdominal and cremaster reflexes may return, but the deep reflexes are quite abolished. Nutrition is low and bed sores easily occur; there is no sweating.

The second stage is one of reflex excitability, which begins after four weeks and continues for four months. Stroking the sole leads to a general withdrawal of the foot, the "receptive field" enlarges, that is stimulation

of an area beyond the limits of the sole will induce the reaction, the movements increase in violence and may be bilateral. In time extensor tonus returns, together with the tendon jerks, but these are less evident than in hemiplegia. Plantar extension may follow the flexion, but it is rarely primary. Sphincter retention gives place to reflex micturition, nutrition improves and there may be increased sweating.

Resistance to infections is low and if any toxæmia occurs, the cord is poisoned, complete reflex loss occurs with retention of urine and faeces and wasting of muscles.

Two cases recently seen at Dunedin of complete paraplegia gave the picture of the poisoned cord.

Case 1. A man of thirty-five who came in complaining of "rheumatism" which he referred to shearing wet sheep. He gave clinical evidence of a complete transverse lesion of the cord precisely at the level of the seventh dorsal segment. Above this level sensation and movement were normal and the epigastric reflex was present. Below this level there was complete abolition of movement and of all sensation, superficial and deep. All reflexes were abolished, skin and tendon. So there was loss of deep reflexes with insensitive muscles. The sphincters were completely relaxed, with dribbling incontinence, and extensive trophic ulcers occurred.

The lesion was due to a lympho-sarcoma and at the *post mortem* examination the growth proved to be far more extensive than the clinical indications suggested.

Case 2. A man of sixty-two was quite well till dinner-time on a certain day. He then had severe pain in his chest and legs and fell several times. In three hours he was completely paraplegic. When examined he had flaccid palsy, with loss of superficial and deep sensation from the sixth dorsal segment downwards. The reflexes were remarkable; the tendon jerks were completely and permanently lost below the lesion. When first examined the epigastric and abdominal reflexes were absent, but a plantar flexor response was obtained, followed by withdrawal of ankle, knee and hip on both sides, especially the left. There was retention of urine and catheterization was required.

Two days later, the plantar response was extensor. Seven days later this was still observed and a well marked epigastric reflex was obtained, though the flaccid palsy and loss of deep reflexes continued. Curiously this patient was aware of the state of his bladder. The pulse rate was very high and enormous trophic sores occurred before death.

Such lesions are not likely to be confused with anything else. What I desire to submit for consideration is the state of the muscle-pressure sense, particularly its absence, in cases otherwise difficult of diagnosis.

DR. PAUL DANE said that he had been greatly interested in Professor Jones's paper more especially in his opening remarks concerning the difficulty in diagnosis between some cases of *tubes* and some so-called functional cases. He had seen several such patients and at times had considerable difficulty in forming the diagnosis. He had found that in these cases the muscle pressure sense was depressed and could never decide that it was lost. He thought that the explanation of these cases was that the muscle sense was essentially connected with the upright

position and that as this was a recent biological development, it suffered early from any functional depressions, such as general toxæmia or exhaustion. The upright position had of necessity carried with it an increasing susceptibility to functional derangement.

## TWELVE CASES OF INSANITY IN AUSTRALIAN ABORIGINES WITH A COMMENTARY.\*

Taken from the Records of Parramatta Mental Hospital, New South Wales.

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### Commentary.

Of these twelve patients nine were males and three females; 33.3% were congenitally deficient; 16.6% were due to drugs (alcohol); 25% were in a state of excitement and exaltation. Of the remaining 25% one was associated with epilepsy, one was suffering from phthisical insanity and one suffered from general paralysis of the insane.

### Crimes.

Five of the twelve were charged with criminal offences, one of wife murder, two of sexual offences, one of stealing and one of placing an obstruction on the railway line. A sixth was in the habit of unmercifully beating her only child. One crime, when the patient was charged with stealing was due, no doubt, to inability to earn money to purchase the common necessities of life; this patient had phthisical insanity. One patient, rendered stupid and demented by alcohol, foolishly placed an obstruction on the railway line. The sexual patients showed in some cases perversion, in others want of control of the reproductive instinct.

### Body Diseases.

Of the patients 25% died of lung diseases, this tendency being more marked than among the whites.

### Termination of Mental Illness.

Five patients or 41.6% died; three or 25% recovered. The rest remained chronically insane. The duration of illness of the patients who recovered averaged four months which is somewhat shorter than the average duration of the same cases in whites. Probably their lowly developed brains broke down under a smaller strain than would be necessary in the case of whites and therefore there was less damage to repair and a lower standard of normality (black) for them to attain before they could be considered as recovered.

### Delusions and Hallucinations.

These were generally of a more elementary and simple nature than those found generally amongst white patients and showed no sign of being organized into a system or any attempt at support by logical reasoning. No false premisses were formed, but the delusions were of the nature of a simple assertion. Many of them were of a childish nature and related to the sexual and reproductive instincts.

\* Read with the kind permission of Dr. E. Sinclair, Inspector-General of Mental Hospitals, New South Wales.

### Remarks on Individual Cases.

Case 1. This patient had delusions related to the reproductive instinct. She showed degradation of the æsthetic faculty and a want of shame and modesty and used obscene language.

Case 2. This patient was in the habit of unmercifully beating her child, showing a loss of the tender emotion of the maternal instinct.

Case 3. This patient was a masturbator with strong hereditary tendencies to insanity. He showed want of control of the sexual instinct with perversion in the direction of strong homosexual tendencies.

Case 4. This patient showed want of control of his sexual instincts.

Case 5. This patient showed a want of modesty and shame and had fleeting delusions associated with the reproductive instinct.

Case 6. This patient had hallucinations connected with the opposite sex.

Case 7. This patient, demented by alcohol, committed a crime, both foolish and wanting in motive, for which he could give no reason.

Case 8. This patient had alcoholic hallucinations and delusions about the supernatural and also exhibited the instinctive dislike of the aborigine for the white races.

Case 9. This patient suffered from prison psychosis; he promptly recovered when he was transferred from the criminal to the free division and showed his appreciation of the fact that this change in his condition was associated with more hope of his freedom.

Case 10. This patient was epileptic and was in addition unable to speak English more than very imperfectly.

Case 11. This patient was a general paralytic whose insane actions were connected with possums, often an article of food amongst aborigines.

Case 12. This patient was probably driven directly to his crime by want due to his physical condition.

All these cases in comparison with white patients showed: (i.) A want of organization of the sentiments, (ii.) a low form of perception, (iii.) poor association and poverty of ideas, (iv.) absence of acquisitiveness and no constructive ability, (v.) tested by the Terman scale their native intelligence far below that of the white, (vi.) little power to appreciate and adapt themselves to the social standard of honesty and sexual morality *et cetera* which are those of the white community, (vii.) strong and ruling passions of the animal nature, (viii.) the two female imbeciles were married and had children. This fact throws doubt upon the mental attainments and discrimination of their spouses and in accordance with the Mendelian laws one would expect this strain to breed themselves out to ultimate extinction, (ix.) several had corneal opacities.

### Case 1.—Congenital Mental Deficiency Without Epilepsy.

M.C., a woman aged about thirty-five years, born at Brewarrina where she had lived all her life in the Mission Station, was admitted on April 6, 1920. Her medical certificates stated that she could not give any particulars regarding herself. She said that she had any number of children (up to twelve). She was incapable of feeding herself. She had either no control over her sphincters or was deliberately dirty. She was dull and stupid, quite irresponsible and defective in memory. The family his-



tory was unimportant. She denied alcoholic excess. On admission she answered at random and quite inconsistently. She did not appear depressed or manifest any interest in her affairs. She was obedient and docile. There was an opacity in the cornea of her right eye. In April, 1923, she was quiet, well-behaved, useful in the ward, clean and tidy. She was simple-minded and lacking in intelligence. Her eyesight was much impaired due to the old corneal trouble.

*Case 2.—Congenital Mental Deficiency Without Epilepsy.*

K.D., a married woman, alleged to be fifty years old, but not looking this age, from Brewarrina, was admitted on March 26, 1914. She had had remissions for several years. Her medical certificates stated that she would laugh absurdly when questioned, frequently became violent and would attack anyone who happened to be near with sticks. She would thrash her child unmercifully. When questioned, at times she was rational, at other times irrational. She would laugh out loudly and say she was sick and giddy in the head. When questioned as to whether she got violent she replied—"Sometime me beat 'em with stick." She had been born at Boorooma and had lived in the north west of New South Wales. She had one child living; several dead.

On examination she was a full-blooded aboriginal of typical appearance, eyes very dark brown, the whites stained yellow. The upper quadrant of the left cornea was nebulous and the sight in this eye defective. Her heart, lungs and abdomen were normal. She was very irresponsible and would laugh readily. She appeared to be good-tempered and had been quiet and well-behaved since admission. She smoked and chewed tobacco and did a little work. She remained quiet and industrious until she was discharged on December 2, 1914. She worked well in the ward, was good-humored and tractable. She was certainly irresponsible, but no more so than the usual aboriginal.

*Case 3.—Congenital Mental Deficiency.*

W.C., a labourer, aged 19, from Brewarrina, was admitted on December 26, 1916. He had had several slight previous attacks. His medical certificates state that he appears to be mentally deficient and of weak intellect. He says that he gets an erection of the penis and is then unable to control himself. He says he assaulted and had sexual connexion with his mother some time ago. He attempted to assault criminally a small boy some days ago. He is stupid, dull, ignorant and irresponsible. He is quite unable to get a living or take proper care of himself. His family history and personal history yielded nothing of importance. He denied having had venereal disease. On admission, physically nothing abnormal was detected. He was a strongly built, full blooded aboriginal. He was weak minded, could not read or write and was disoriented for time and place. He started sexual improprieties when allowed to sleep in association. He was inclined to tease the other patients. He was quick tempered and attacked attendants on two occasions. In December, 1919, he had colitis and again in April, 1920, when he collapsed a few times. In August, 1920, he com-

plained of severe abdominal pain, sank and died. *Post mortem* examination showed ulcers in the descending colon and one hundred and twenty cubic centimetres of clear fluid in the pericardium. The lungs were healthy. The brain apparently was not examined.

*Case 4.—Congenital Mental Deficiency.*

Chance or Charley, a labourer, single, aged thirty, was admitted on December 22, 1877. The supposed cause of his mental condition was gaol life and its duration nine months. Before admission he had been serving a sentence for attempted rape. He set the whole of the gaol authorities at defiance, behaved in a most erratic manner and was several times examined with a view to his being sent to an asylum. The members of the Board, however, did not consider him to be irresponsible for his actions or free from malingering and he was allowed to complete his sentence. On admission he was childish in manner, boasted a great deal of his equestrian abilities and immediately commenced to set everyone at defiance, as he had done in gaol. Two applications of the interrupted current served, however, to make him perfectly well-conducted and never afterwards did he give the least trouble. Though to a great extent irresponsible for his actions and under proper management able to conduct himself well, there was no doubt some weakening of intellect and this, combined with the strong animal passion of his race and his prior history, rendered him scarcely a fit subject to be discharged. His habits were cleanly, he assisted in the wards and gave no trouble. There was on mental change during 1878. He was fairly quiet, orderly and industrious. He had an attack of double pneumonia, but recovered. In 1879 he remained completely well for a couple of months, but then got pleural effusion and attacks of pain in the pit of the stomach attended by dyspnoea and restlessness. The attacks became more frequent, his feet oedematous (though there was no albuminuria) and he got steadily weaker and died after much suffering on March 3, 1879.

*Case 5.—Acute Mania.*

M.W., a woman, aged thirty-five, single, from near Coonamble, was admitted on September 16, 1921. The medical certificates stated that she was noisy, restless, hard to control, incoherent in her speech and that she cried out continually all night. She said that the father of the babe that was to be born to her soon left his mark on three spots on each of her breasts and points to spots on her legs as being his flag. She would point to the wall and say there was a flag painted there and this flag represented different people. On admission she was restless and noisy, her speech was disconnected and incoherent and she had a delusion that she was going to have a child. Since admission she had been noisy, violent and abusive. She was euphoric, exalted, happy and self-satisfied. On January 3, 1922, she had fever, albuminuria and chest signs probably of tuberculosis. In April she was in the refractory ward, being noisy and troublesome at times, silly and irresponsible. Physically she was well nourished.

(To be Continued.)